

# ALTISTART 46 MAINTENANCE MANUAL SUMMARY

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### 1°) Control of various parts

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- The last 5 faults evolution
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- The motor runs but does not reach his rated speed
- The starter supplies current but the motor does not run
- The motor starts without following the normal acceleration
- The motor does not brake the load correctly

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List of spare parts

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Parts list

Characteristics of the self-transformer

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Igniter card

Measure card

Interface card

Filter card

Control card

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## MAINTENANCE MANUAL GENERALITIES

### **1°) Purpose**

The present document is describing the policy and the resources to implement for on-site repair of Altistart 46. The product structure is identical to the one of ATS23, that is to say, a control element common to all sizes, and a power element specially designed to each calibre.

### **2°) Application field**

This document concerns Altistart 46 of following calibre:

Size 1	ATS46D17N
	ATS46D22N
	ATS46D32N
	ATS46D38N
Size 2	ATS46D47N
	ATS46D62N
	ATS46D75N
	ATS46D88N
	ATS46C11N
	ATS46C14N
Size 3	ATS46C17N
	ATS46C21N
	ATS46C25N
	ATS46C32N
Size 4	ATS46C41N
	ATS46C48N
	ATS46C59N
	ATS46C66N
Size 5	ATS46C79N
	ATS46M10N
	ATS46M12N

### **3°) Product design and manufacturing**

All modules, accessories and software are designed and developed by Schneider Electric. They are also manufactured and tested at Schneider factory at Pacy Blanchet.

At each design and manufacturing step, the products are processed with great care. They are constantly monitored to guarantee a high quality level.

### **4°) Required abilities**

The product being constituted with a power element common to ATS23, an interface and control element specially designed to ATS46, delivered as spare parts (as ATS23), required abilities are similar to the ones needed for ATS23. A knowledge of ATS46 functionality is necessary to repair at best these products.

## MAINTENANCE MANUAL GENERALITIES

### **5°) Technical support**

#### 5-1°) Training manual

In order to enable people to have training, a French (VVDFD496042FR) and English (VVDFD496042EN) version of the Training manual is now available.

#### 5-2°) Catalogue

A catalogue specific to Altistart 46 is now available in French (VDOC32F201) and English (VDOC32A201).

#### 5-3°) User's manual

Various utilisation guides are available in four languages (French- English-German-Spanish).

- soft start-soft stop unit: VD0C32Q301
- display and adjustment option VW3G46101: VD0C32Q302
- communication option VW3G46301: VD0C32Q303
- transformation from ATS23 to ATS46: VVDED397011

#### 5-4°) Operation instructions

Each additional part other than visual display and communication is delivered with a operation instruction in four languages (French- English-German-Spanish)..

- PC link: VW3G46104
- port for display option: VW4G46103

Moreover, all spare parts are also delivered with instruction bulletins.

### **6°) Training**

#### 6-1°) Customer's training

Schneider Training Institute (S.T.I.) is organising training sessions on Altistart 46 in order to know how to use these products. For more information, please contact S.T.I. by phone (33-1 41 39 60 00) or by Fax (33-1 41 39 60 72).

#### 6-2°) Internal training

This session enables you to become an expert as far as the choice and the implementation of Altistart 46 is concerned. Session program is included in appendix.

For more information, please read the training sessions guide of DAS CI.

## MAINTENANCE MANUAL GENERALITIES

### 6-3°) After Sale Service training

This training session is only reserved to the on-site operators. It requires a fair knowledge of the product and its applications (ventilation, pumping, conveying, ...).

For more information, please contact the training group manager at DAS CI.



## ALTISTART ATS46 EXPERT

**EXP46**

1 day

### *Training objectives*

- To become an expert in the installation of Altistart ATS46 controllers.

### *Knowledge required*

- Knowledge of the main applications (cooling, pumping, horizontal handling).
- Thorough knowledge of power electronics.
- Knowledge of asynchronous motors.
- Hands on experience.

### COURSE CONTENTS

- Range.
- Technology.
- Performance.
- Protection.
- Client/sequence terminals.
- Functions.
- Options.
- Accessories.

### DOCUMENTATION PROVIDED

Altistart ATS46 training manual.  
Programming manual.

### TEACHING NOTES

Lectures : 80 %  
Practical : 20 %

**COURSE ORGANISER: SBS**

**LOCATION: RUEIL GARE**

**PRICE: Free**

### APPLICATION EQUIPMENT

Altistart ATS46.



To reduce the amount of travelling, training courses have been compacted into one or two weeks (depending on your initial level).  
Consult the schedules to make the best choice.

## MAINTENANCE MANUAL REPAIR DEPARTMENT RESOURCES

### 1°) Equipment

List of the necessary tools to repair ATS46:

- set of magnetic flat-blade screwdrivers,
- set of magnetic cross-point screwdrivers,
- set of torx screwdrivers,
- set of metric socket spanners, 5.5 to 14 mm with ¼" pin,
- 2" extension for socket spanner ( ¼" pin),
- 12" extension for socket spanner ( ¼" pin),
- set of metric Allen keys, 2 to 14 mm,
- set of metric swivel Allen keys, 2 to 14 mm,
- torque spanner, 0.5 to 10 Nm,
- metric Allen key sockets, for torque spanner, 2 to 14 mm,
- cross-point driver bits, for torque spanner,
- flat-blade driver bits, for torque spanner,
- needle nose pliers,
- contact lubricant,
- set of flat spanners 5.5 to 19 mm,
- set of ring spanners 5.5 to 19 mm,
- wires cutter,
- plastic clamps,
- multimeter,
- ammeter clip,
- oscilloscope,
- lamp to check thyristors continuity.

### 2°) Software

Specific PC software VW3G46103 can be used to repair ATS46. This option is including a set of two floppy discs, one 3-meter PC-ATS linking cable RS232, one adapter 9/25 pins and a VY1G461510 box to be ratched in place of the visual display additional part.

To install this software:

1. Start Microsoft Windows<sup>®</sup>,
2. Insert floppy disc 1 in drive A,
3. From the File Manager, select <File> then <Run>.
4. Key in a:\install and press enter,
5. For floppy disc 2, follow the instructions that will appear on the PC screen.

Minimal system requirements:

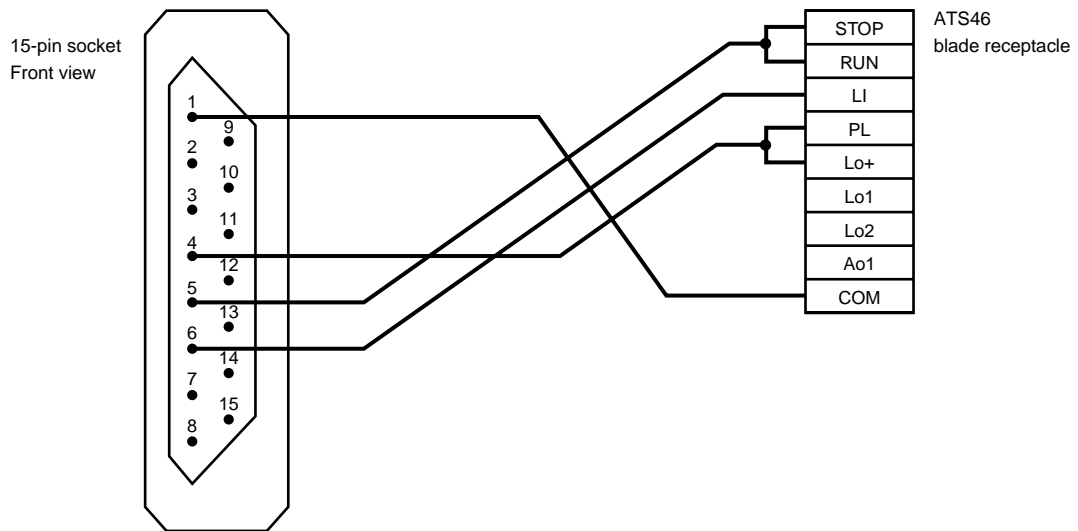
- Computer 486 with 8 MB RAM.

**MAINTENANCE MANUAL  
REPAIR DEPARTMENT RESOURCES**

**3°) Test bench**

In order to test Altistart 46 after repairing, you will find enclosed a file allowing the construction of a test bench. It suits the one used for Altivar tests. Only the connection lead between the Altistart 46 receptacles and the 15-point sub-d receptacle is different.

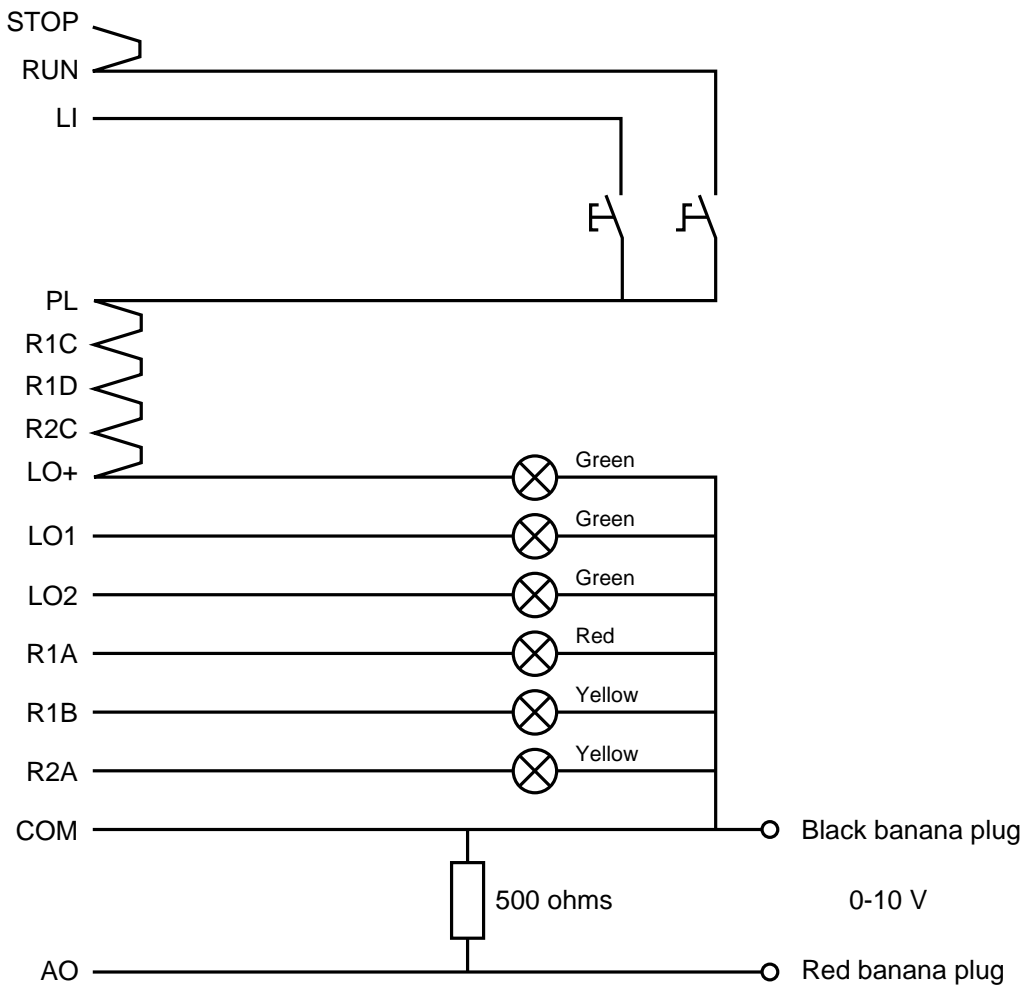
Connection lead diagram:



Moreover, a wiring diagram allowing to make a control box for Altistart 46 is included.

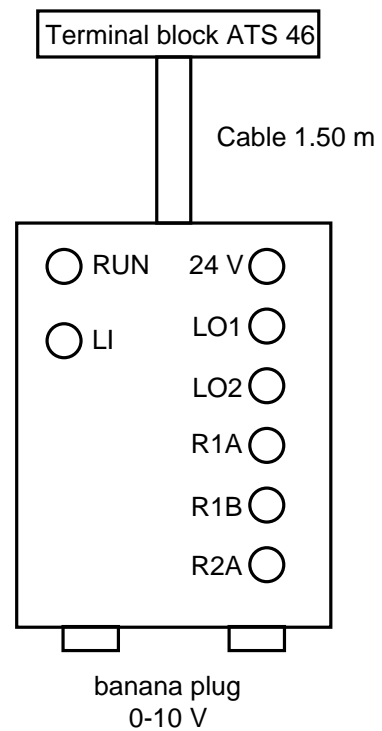


# ATS46: CONTROL BOX



## Equipment required:


- 1 Black banana plug
- 1 Red banana plug
- 3 green indicator lamps
- 1 red indicator lamps
- 2 yellow indicator lamps
- 2 switches
- 1 résistance 500 ohms / 1/4 W



## CONSTRUCTION OF THE TEST PLATFORM


# ATV PLATFORM (380v 220v)

## CCA TELEMECANIQUE

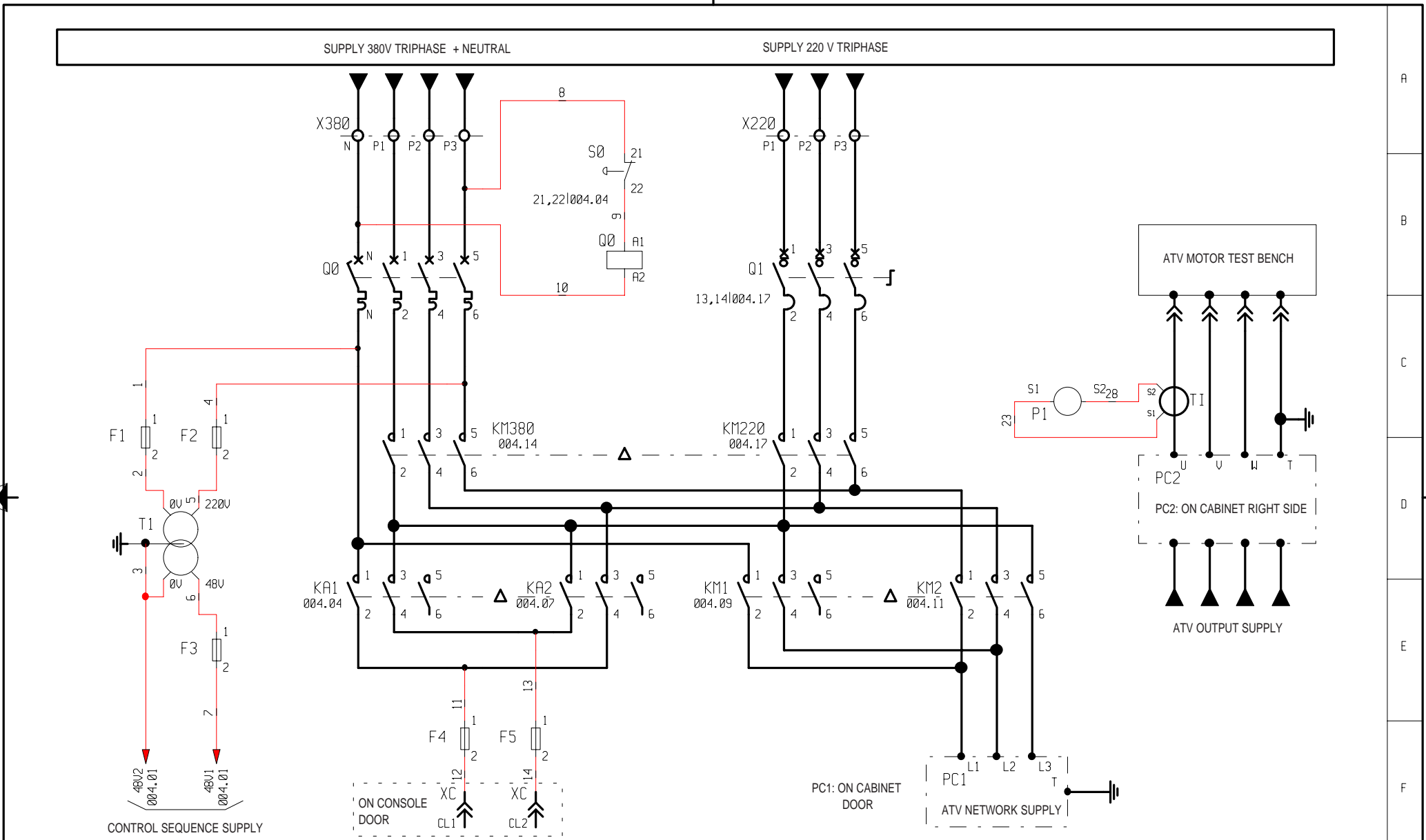
Ind.	Nom	Date	Visa	Nom	Date	Visa	Nature des Modifications	
03	OZOUF L			OZOUF L			MISE A JOUR	
02	OZOUF L			OZOUF L			MISE A JOUR	
01	OZOUF L			HIRTH D			CREATION DU DOSSIER	
	Vérfié		Approuvé			Nature des Modifications		
CLIENT TELEMECANIQUE				PAGE DE GARDE			PLATEFORME ESSAI ATV	
REFERENCE CLIENT TELEMECANIQUE						PROJ:51049 IDI : 01 FORMAT A3	RADICAL 51049	VU   VF   CD IED FOLIO 03 001

PAGE	DESIGNATION	EVOLUTION INDEX				
<b>001</b>	FLYLEAF			03		
<b>002a</b>	RECAPITULATION PAGE			03		
<b>003</b>	POWER			03		
<b>004</b>	CONTROL SEQUENCE			03		
<b>005</b>	CONTROL SEQUENCE			03		
<b>006</b>	CONTROL SEQUENCE			03		
<b>007</b>	CONTROL SEQUENCE			03		
<b>008</b>	OPERATING LEGEND		02			
<b>009</b>	OPERATING LEGEND	01				
<b>010</b>	DOOR AND CABINET	01				
<b>011</b>	CABINET-ATV66 CONNECTION	01				

PAGE	DESIGNATION	EVOLUTION INDEX				

		Page Récapitulative			
		ATV PLATFORM			
	PROJ: 51049	RADICAL	UJ	VF	CD
	FORMAT A3	51049			
		IED	FOLIO		
		03	002a		

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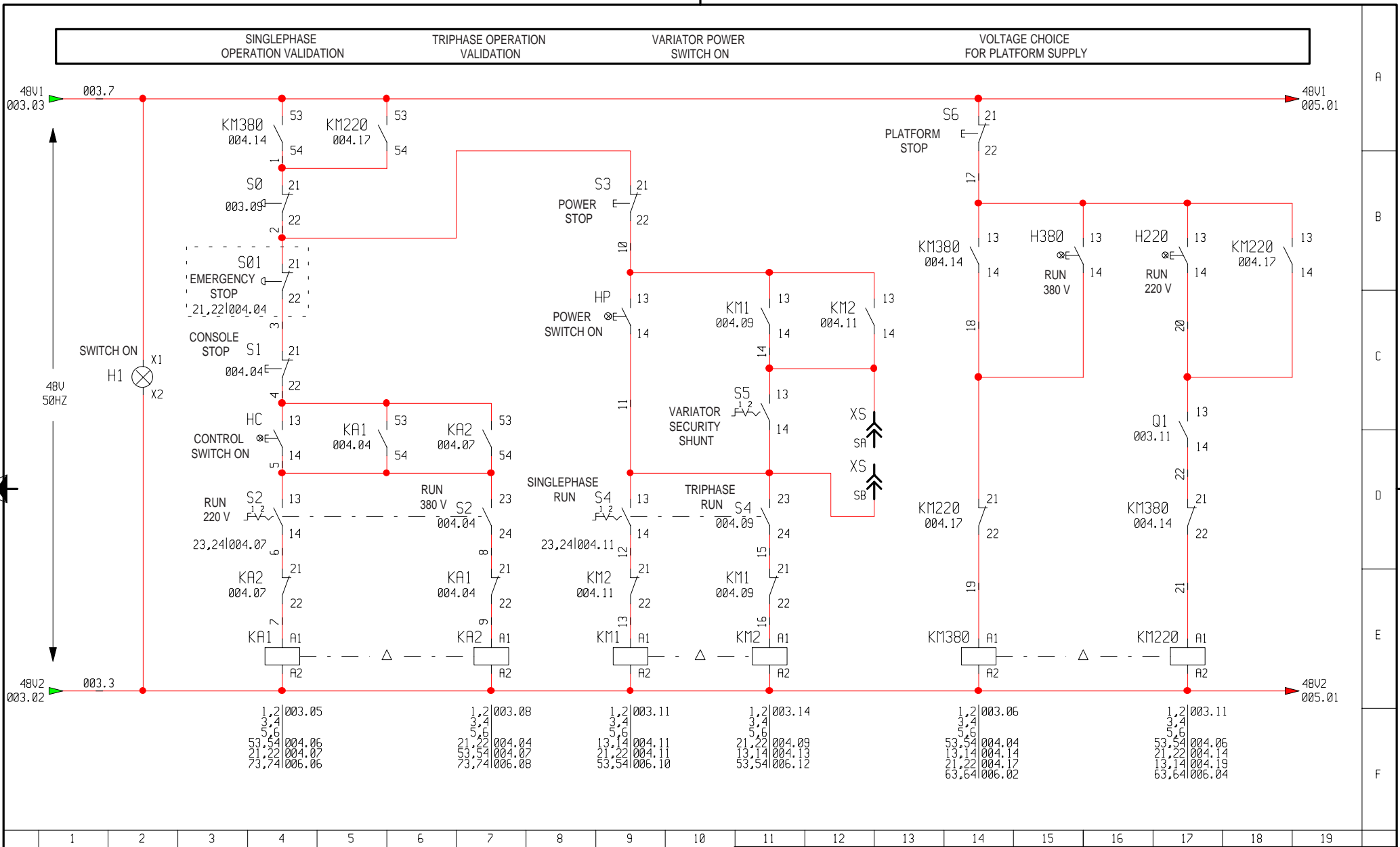


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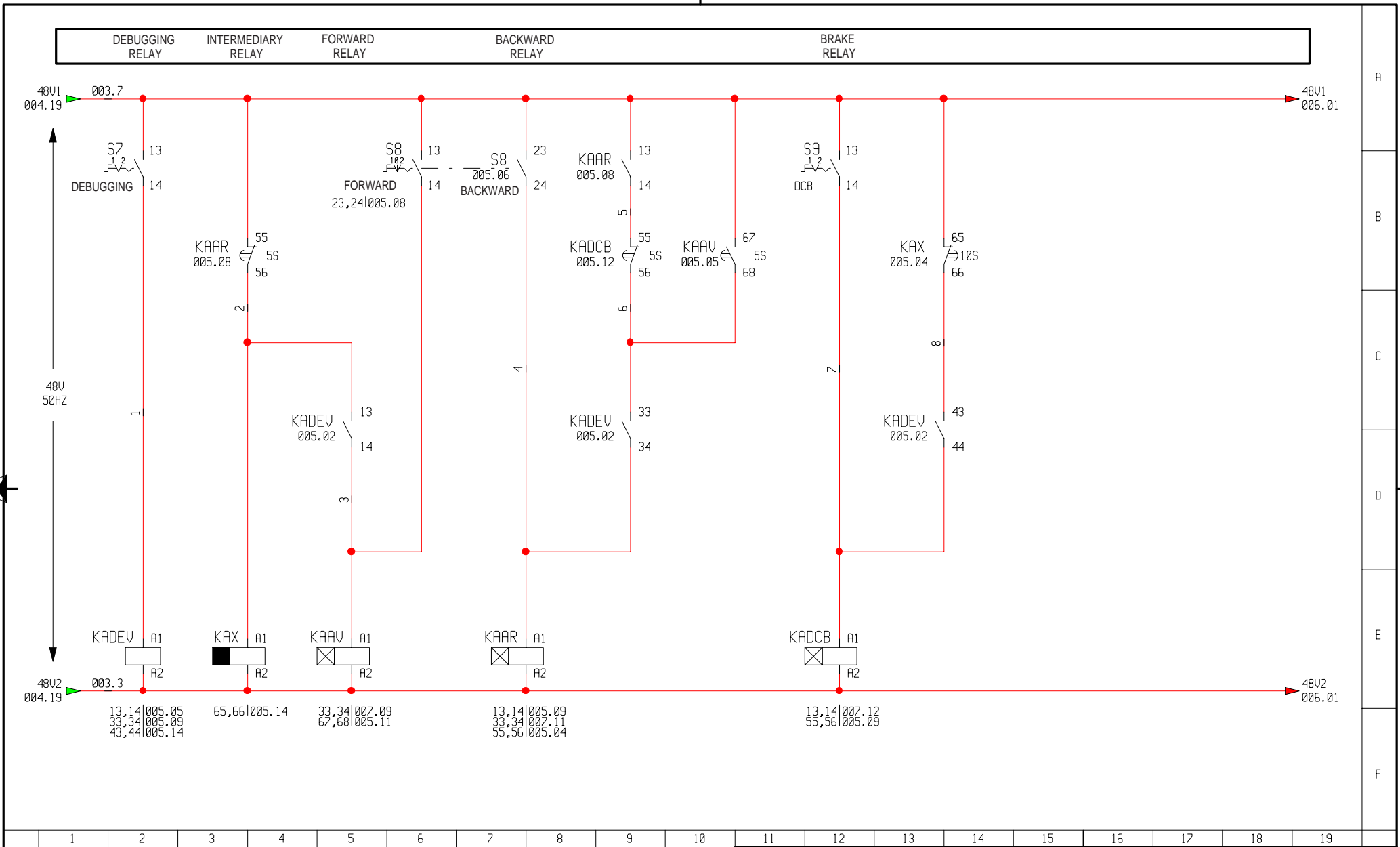
		Nom	Date		
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Saisi		OZOUF L	14.03.95	ATV PLATEFORM 380-220V	
Controle saisie		OZOUF L	14.03.95		
<b>Telemecanique</b>			PROJ:51049	RADICAL	VU   VF   CD
			FORMAT A3	51049	IED
				03	003

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NOTA: BOUTONNERIE ET SIGNALISATION  
SUR FACE AVANT CONSOLE

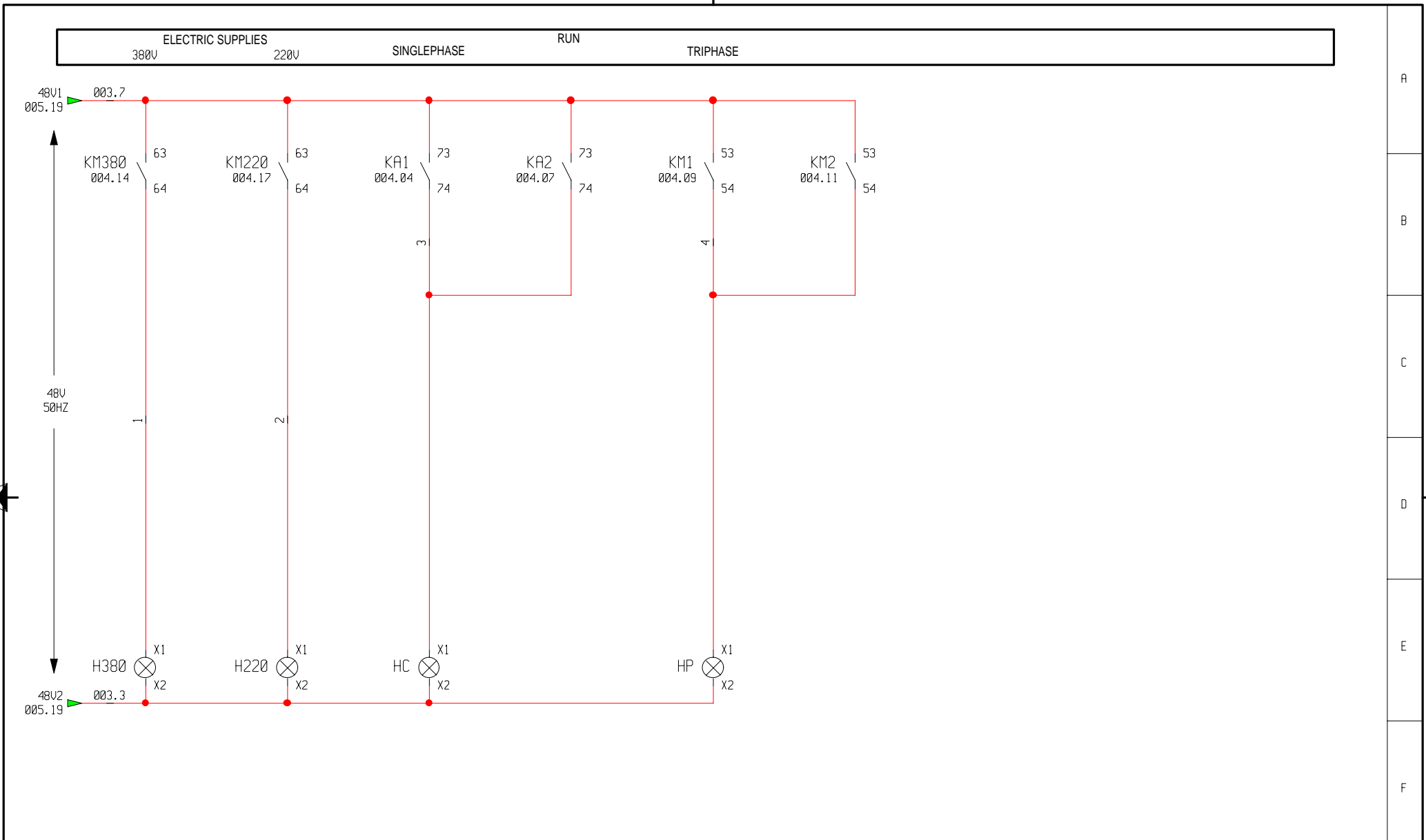
Nom		Date	
Etabli	HIRTH-D	14.03.95	CONTROL SEQUENCE
Saisi	OZOUF L	14.03.95	
Controle saisie	OZOUF L	14.03.95	
PROJ:51049		ATV PLATEFORM 380-220V	
FORMAT A3		RADICAL	VU   VF   CD
51049		IED	FOLIO
		03	004



NOTA: BOUTONNERIE ET SIGNALISATION  
SUR FACE AVANT CONSOLE

Nom		Date	
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Controle saisie	OZOUF L	14.03.95	
PROJ:51049		RADICAL	
FORMAT A3		51049	
		VU VFI CD	
		IED FOLIO	
		03 005	

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NOTA: BOUTONNERIE ET SIGNALISATION  
SUR FACE AVANT CONSOLE

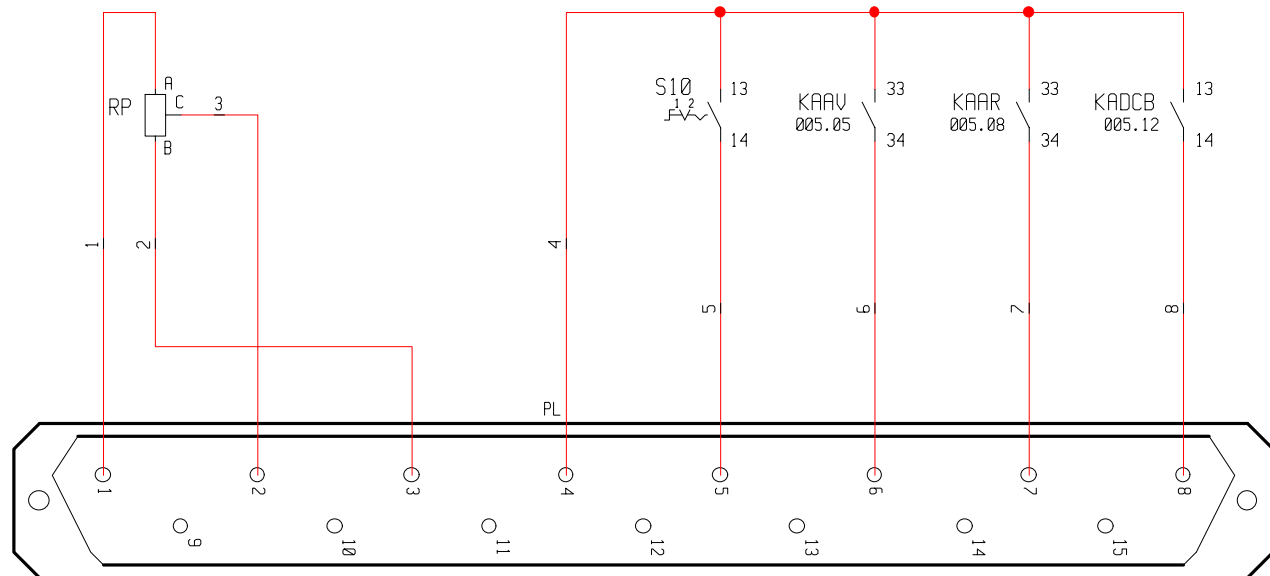
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Controle saisie	OZOUF L	14.03.95	
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Telemecanique		51049	IED FOLIO
FORMAT A3			03 006

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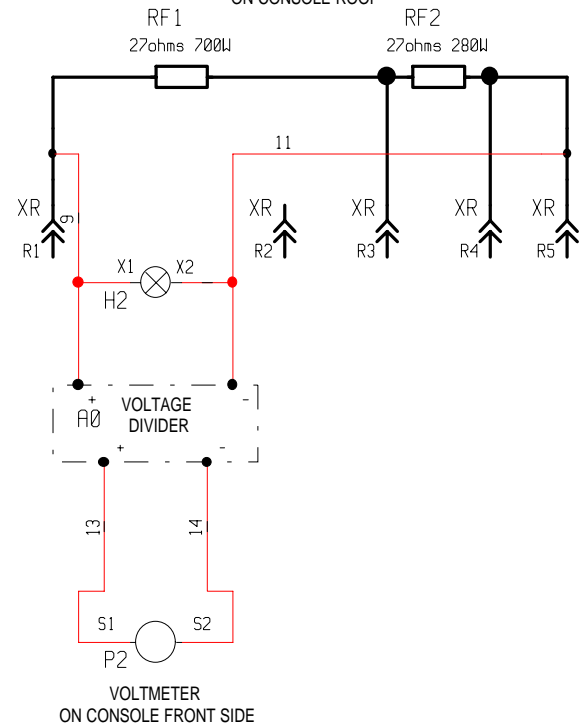
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S10: LOCKING-UNLOCKING SWITCH



VIEW ON SEAM SIDE  
**PC3**  
 SUB D.56 PIN CONNECTION  
 ON CONSOLE FRONT SIDE

BRAKE RESISTANCE  
 ON CONSOLE ROOF



VOLTMETER  
 ON CONSOLE FRONT SIDE

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Nom		Date	
Etabli	HIRTH-D	14.03.95	CONTROL SEQUENCE
Saisi	OZOUF L	14.03.95	ATV PLATEFORM 380-220V
Controle saisie	OZOUF L	14.03.95	
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FORMAT A3		51049	IED FOLIO
			03 007



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# DEVICES OPERATING LEGEND

REFERENCE	PAGE COL	OPERATING DESCRIPTION	SUPPLIER	EQUIPMENT
Q0	003.05	CONTACT BREAKER	TELEMECANIQUE	LD4LC040E
Q0	003.05	PROTECTION MODULE	TELEMECANIQUE	LB1LC04L53
Q0	003.05	COIL 240 V 50 HZ	TELEMECANIQUE	LX1LC240
Q0	003.05	HANDLE + DRILL-PLATE	TELEMECANIQUE	LA9LC530
Q1	003.11	MOTOR CIRCUIT BREAKER	TELEMECANIQUE	GK3EF40
Q1	003.11	ADDITIONAL CONTACT START-STOP	TELEMECANIQUE	GK2AX10
Q1	003.11	EXTERIOR CONTROL	TELEMECANIQUE	GK3AP03
F1	003.02	NEUTRAL FUSE SUPPORT	TELEMECANIQUE	DF6N10
F2	003.03	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F2	003.03	FUSE CARTRIDGE aM	TELEMECANIQUE	DF2-CA02
F3	003.02	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F3	003.02	FUSE CARTRIDGE gl	TELEMECANIQUE	DF2-CN04
F4	003.03	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F4	003.03	FUSE CARTRIDGE aM	TELEMECANIQUE	DF2-CA04
F5	003.02	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F5	003.02	FUSE CARTRIDGE aM	TELEMECANIQUE	DF2-CA04
T1	003.02	SINGLEPHASE TRANSFORMER	LEGRAND	250VA 220-48V
P1	003.12	VOLTMETER	IME03	GALVA10UCC96X96
P1	003.12	"BRAKING" LABEL		
A0	007.17	VOLTAGE DIVIDER	IME03	DIV1000-100V1mA
P2	003.16	AMMETER 0-40 A	SOCOME	17200404
P2	003.16	"MOTOR I" LABEL		
T1	003.13	INTENSITY TRANSFORMER	SOCOME	172T0540
PC1	003.13	MARTIN LUNEL PLUG 16-25A	LEGRAND	H57568
PC2	003.17	P17 CONNECTOR 16A 3P + E 380 V	LEGRAND	H57568
PC2	003.17	PE BLANKING PLUG	LEGRAND	12mm
XR (5)	003.15	AR TERMINAL (BRAKING R)	TELEMECANIQUE	REF 32903
XS (2)	004.07	AR TERMINAL	TELEMECANIQUE	REF 32903
XC (2)	003.08	AR TERMINAL	TELEMECANIQUE	REF 32903
KA1	004.04	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D901E7
KA1	004.04	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN31
KA2	004.07	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D0901E7
KA2	004.07	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN31
KN1	004.09	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D4011E7
KN1	004.09	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KN2	004.11	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D4011E7
KN2	004.11	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KN300	004.14	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D4011E7
KN300	004.14	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KN220	004.17	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D4011E7

REFERENCE	PAGE COL	OPERATING DESCRIPTION	SUPPLIER	EQUIPMENT
KM220	004.17	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KADEV	005.02	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAX	005.04	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAX	005.04	TIMER ADDITIONAL PART	TELEMECANIQUE	LA3DR2
KAAV	005.05	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAAV	005.05	ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA2DT2
KAAV	005.08	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAAV	005.08	ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA2DT2
KADCB	005.12	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KADCB	005.12	ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA2DT2
H1	004.02	INDICATOR LIGHT	TELEMECANIQUE	XB2BV63
H1		48 V BULB	TELEMECANIQUE	DL1-CE048
H1		"ENERGISED" LABEL	TELEMECANIQUE	ZB2BY2101
S0	003.09	PUSH-BUTTON EMERGENCY STOP	TELEMECANIQUE	XB2BT42
S0	003.09	OPENING CONTACT	TELEMECANIQUE	ZB2BE102
S0	003.09	60 MM LABEL "EMERGENCY STOP"	TELEMECANIQUE	ZB2 - JY 9130
S01	004.04	PUSH-BUTTON EMERGENCY STOP CASING	TELEMECANIQUE	XL - J174
S1	004.04	PUSH-BUTTON	TELEMECANIQUE	XB2BA42
S1	004.04	LABEL "CONTROL STOP"	TELEMECANIQUE	ZB2BY2101
S2	004.04	COMMUTATOR BODY	TELEMECANIQUE	ZB2BZ103
S2	004.04	COMMUTATOR HEAD	TELEMECANIQUE	ZB2BD2
S2	004.04	LABEL "220 V 380 V"	TELEMECANIQUE	ZB2BY2101
S3	004.09	PUSH-BUTTON	TELEMECANIQUE	XB2BA42
S3	004.09	LABEL "POWER STOP"	TELEMECANIQUE	ZB2BY2101
S4	004.09	COMMUTATOR BODY	TELEMECANIQUE	ZB2BZ103
S4	004.09	COMMUTATOR HEAD	TELEMECANIQUE	ZB2BD2
S4	004.09	LABEL "SINGLE TRI"	TELEMECANIQUE	ZB2BY2101
S5	004.11	COMMUTATOR	TELEMECANIQUE	XB2BD21
S5	004.11	LABEL "SHUNT SA SB 0-1"	TELEMECANIQUE	ZB2BY2101
S6	004.14	PUSH-BUTTON	TELEMECANIQUE	XB2BA42
S6	004.14	LABEL "PLATFORM STOP"	TELEMECANIQUE	ZB2BY2101
S7	005.02	COMMUTATOR	TELEMECANIQUE	XB2BD21
S7	005.02	LABEL "DEBUGGING 0-1"	TELEMECANIQUE	ZB2BY2101
S8	005.06	COMMUTATOR	TELEMECANIQUE	XB2BD33
S8	005.06	LABEL "FW 0 RV"	TELEMECANIQUE	ZB2BY2101
S9	005.12	COMMUTATOR	TELEMECANIQUE	XB2BD21
S9	005.12	LABEL "BRAKE 0-1"	TELEMECANIQUE	ZB2BY2101
S10	007.08	COMMUTATOR	TELEMECANIQUE	XB2BD21
S10	007.08	LABEL "RUN 0-1"	TELEMECANIQUE	ZB2BY2101
HC	004.04	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BA3361

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Etabli		HIRTH-D		Date		14.03.95		OPERATING LEGEND							
Saisi		OZOUF L		Date		14.03.95						ATV PLATEFORM 380-220V			
Controle saisie		OZOUF L		Date		14.03.95									
 <b>Telemecanique</b>		PROJ:51049		RADICAL		VU UV CD		IED		FOLIO					
		FORMAT A3		51049				02		008					

# DEVICES OPERATING LEGEND

REFERENCE	PAGE COL	OPERATING DESCRIPTION	SUPPLIER	EQUIPMENT
HC	004.04	WHITE CAP	TELEMECANIQUE	ZB2BW911
HC	004.04	"CONTROL ENERGISED" LABEL	TELEMECANIQUE	ZB2BY2101
HC	004.04	48 V BULB	TELEMECANIQUE	DL1CE048
HP	004.09	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BW3361
HP	004.09	WHITE CAP	TELEMECANIQUE	ZB2BW911
HP	004.09	"POWER ENERGISED" LABEL	TELEMECANIQUE	ZB2BY2101
HP	004.09	48 V BULB	TELEMECANIQUE	DL1CE048
H380	004.16	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BW3361
H380	004.16	"380 V" LABEL	TELEMECANIQUE	ZB2BY2101
H380	004.16	48 V BULB	TELEMECANIQUE	DL1CE048
H220	004.17	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BW3361
H220	004.17	"220 V" LABEL	TELEMECANIQUE	ZB2BY2101
H220	004.17	48 V BULB	TELEMECANIQUE	DL1CE048
H2	007.16	INDICATOR LIGHT	TELEMECANIQUE	XB2BV75
H2	007.16	"BRAKING" LABEL	TELEMECANIQUE	ZB2BY2101
H2	007.16	130 V BULB	TELEMECANIQUE	DL1CE130
RP	007.16	2.2 K POTENTIOMETER	TELEMECANIQUE	SZ1RV1202
RF1	007.16	27 OHMS 700 W RESISTANCE	TELEMECANIQUE	VY1ADR027W700
RF2	007.16	27 OHMS 280 W RESISTANCE	TELEMECANIQUE	VY1ADR027W280
PC3	007.07	PIN PLUG	TELEMECANIQUE	SUB-D 15
X380		TERMINAL + ACCESSORIES	TELEMECANIQUE	AB1-VV1035U
X220		TERMINAL + ACCESSORIES	TELEMECANIQUE	AB1-VV1035U
COFFRET		BLUE CASING + BASEPLATE	TELEMECANIQUE	ACMBP6525

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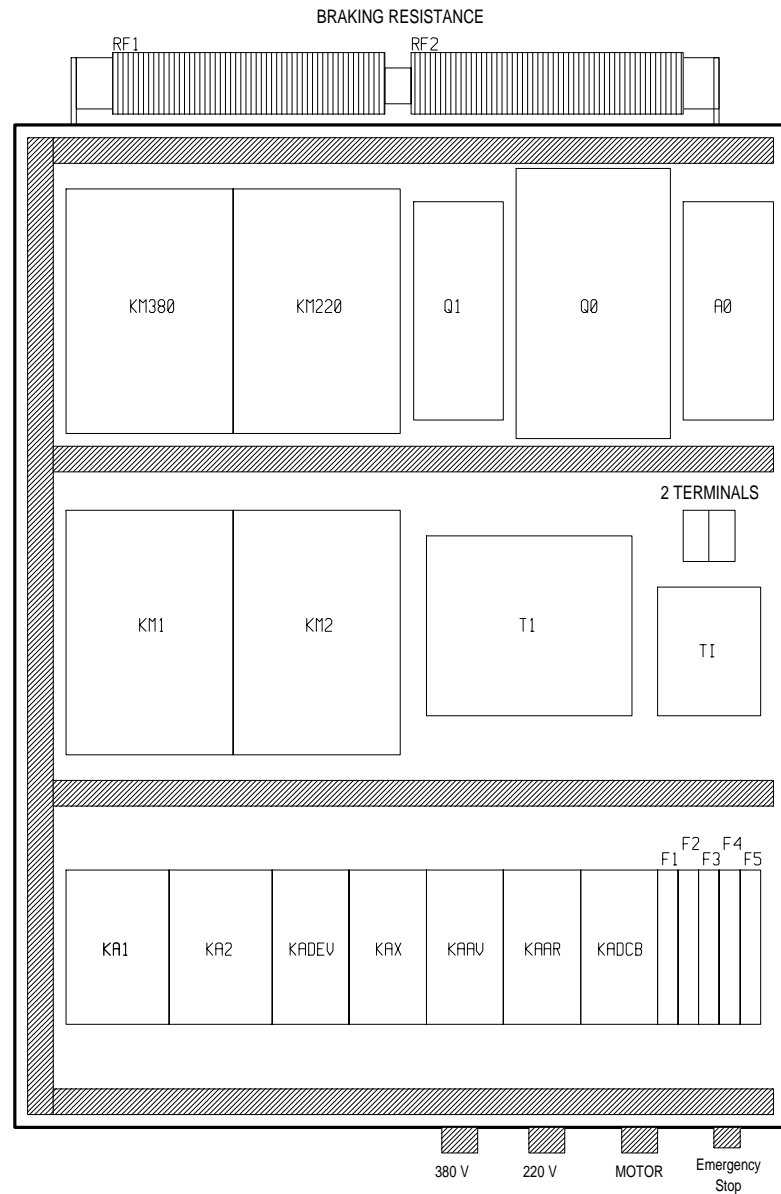
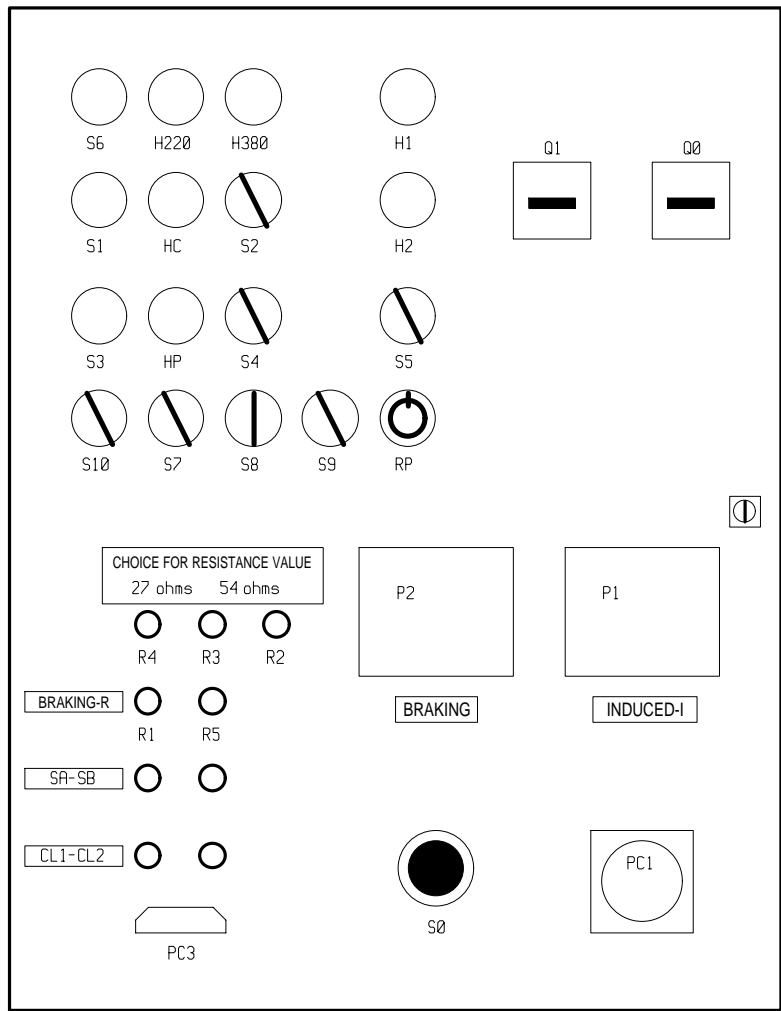
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Etabli		HIRTH-D		Date		14.03.95		OPERATING LEGEND ATV PLATEFORM 380-220V									
Saisi		OZOUF L		Date		14.03.95											
Controle saisie		OZOUF L		Date		14.03.95											
 <b>Telemecanique</b>		PROJ:51049		RADICAL		VU UV CD		IED		FOLIO							
		FORMAT A3		51049		01		009									

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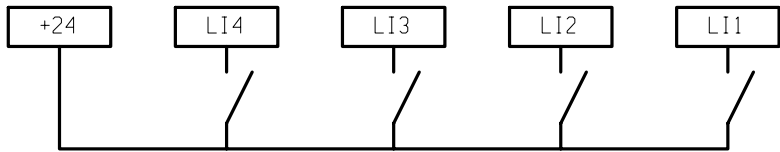
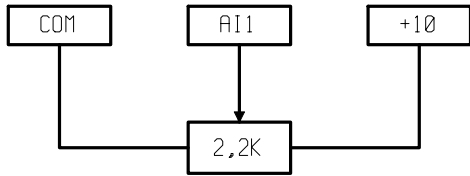
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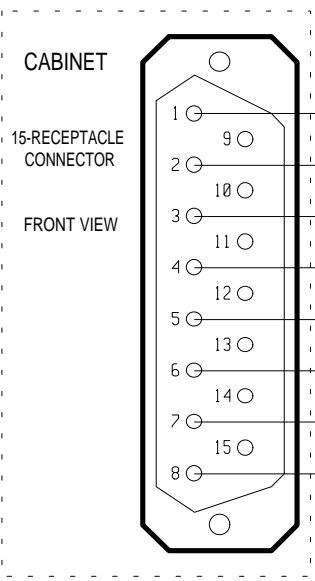
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Nom		Date		DOOR AND CABINET	
Etabli	HIRTH-D	14.03.95			
Saisi	OZOUF L	14.03.95	ATV PLATEFORM 380-220V		
Controle saisie	OZOUF L	14.03.95			
PROJ:51049		RADICAL		VU	UF   CD
FORMAT A3		51049		IED	FOLIO
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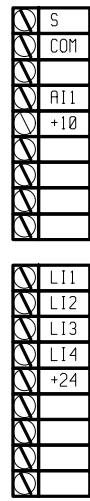
LI1: UNLOCK  
 LI2: FW  
 LI3: RV  
 LI4: JOB STEP BY STEP



- BLUE COM
- RED AI1
- GREEN +10
- GREY +24
- WHITE LI1
- ROSE LI2
- YELLOW LI3
- BROWN LI4

VZ3N006 TYPE CONNECTOR  
 (BLADES CONNECTOR)

TOP VIEW



ATV66


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Nom		Date		CABINET-ATV66 CONNECTION							
Etabli		HIRTH-D						14.03.95			
Saisi		OZOUF L						14.03.95			
Contrôle saisie		OZOUF L		14.03.95		ATV PLATEFORM 380-220V					
				PROJ:51049		RADICAL		VU UV CD		IED FOLIO	
				FORMAT A3		51049		01		011	


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# MOTORS BENCH (380 525 V)

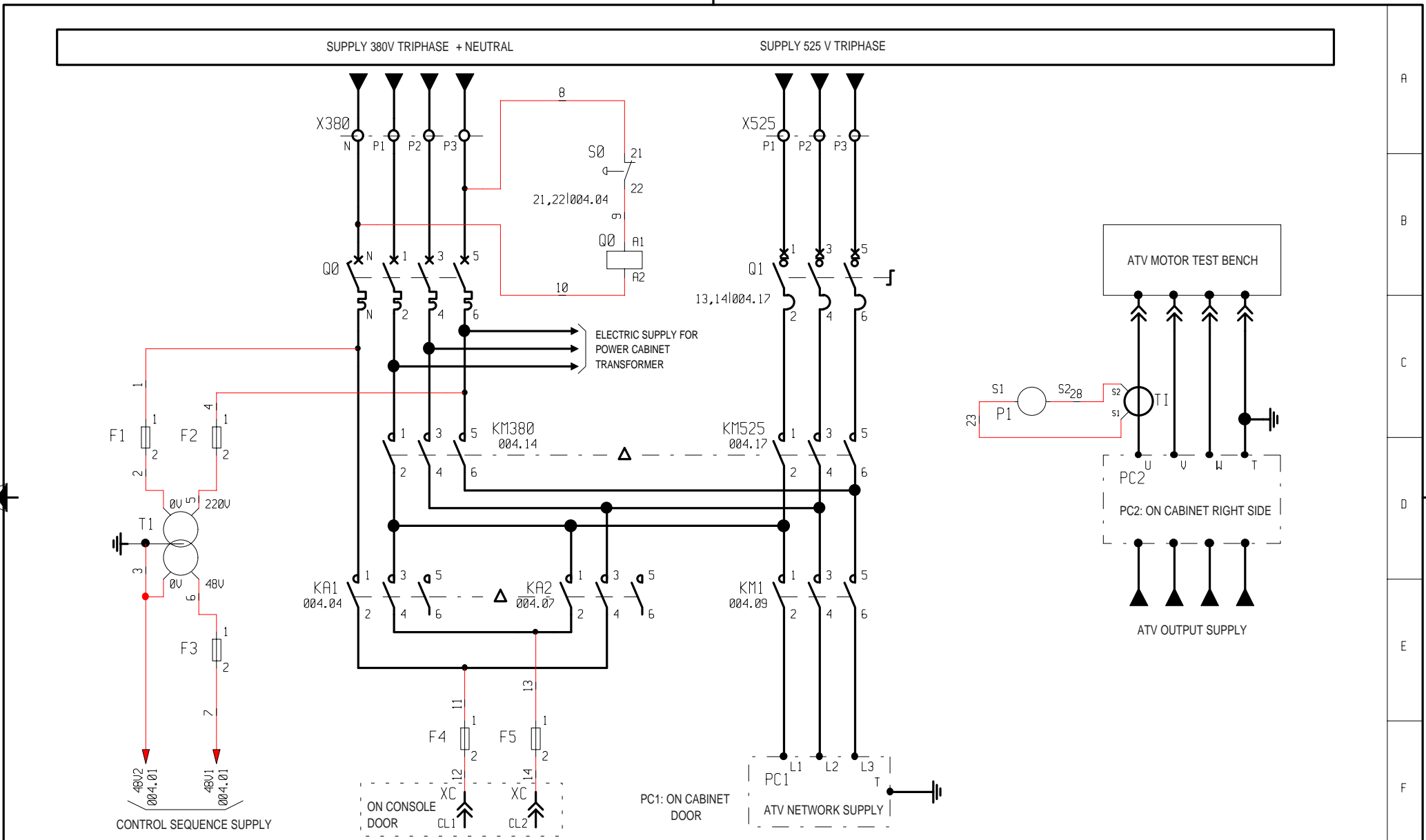
Ø1	F BROSSARD			6 MEUNIER			CREATION DU DOSSIER	
Ind.	Nom	Date	Visa	Nom	Date	Visa	Nature des Modifications	
	Vérifié			Approuvé				
<b>CLIENT TELEMECANIQUE</b>								
REFERENCE CLIENT TELEMECANIQUE							ATV PLATFORM	
				PROJ:51049	RADICAL	VU TUF CD	IED	FOLIO
				IDI : 01	51049		01	001
				FORMAT A3				

PAGE	DESIGNATION	EVOLUTION INDEX					
001	FLYLEAF	01					
002a	RECAPITULATION PAGE	01					
003	POWER	01					
004	CONTROL SEQUENCE	01					
005	CONTROL SEQUENCE	01					
006	CONTROL SEQUENCE	01					
007	CONTROL SEQUENCE	01					
008	OPERATING LEGEND	01					
009	OPERATING LEGEND	01					
010	DOOR AND CABINET	01					
011	CABINET-ATV66 CONNECTION	01					

PAGE	DESIGNATION	EVOLUTION INDEX					

		Page Récapitulative			
		ATV PLATEFORM			
PROJ: 51049	RADICAL	UJ	VF	CD	IED
FORMAT A3	51049				FOLIO
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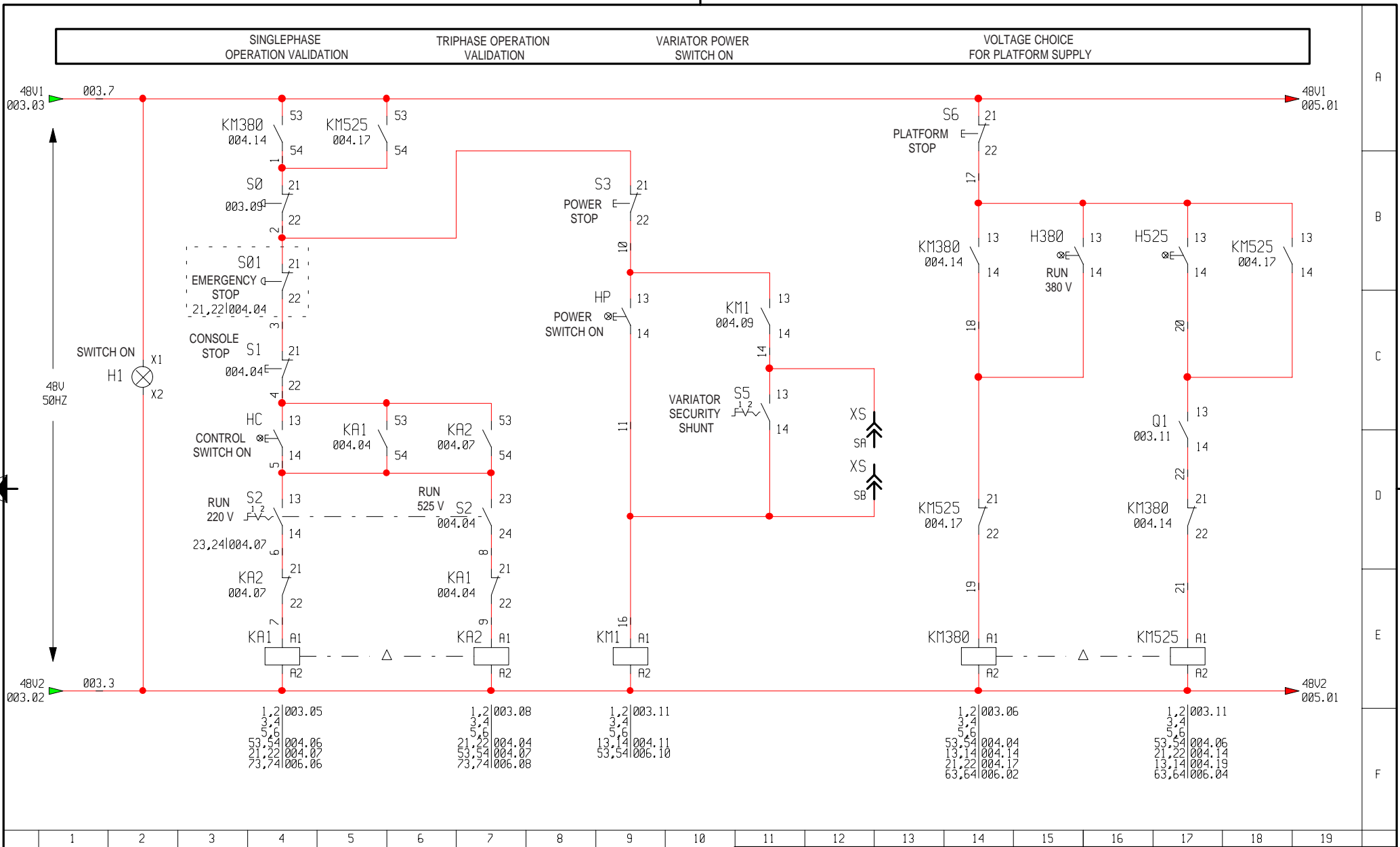
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Nom		Date		POWER	
Etabli	6 MEUNIER	12.05.97			
Saisi	6 MEUNIER	12.05.97			
Contrôle saisie	F BROSSARD	12.05.97	MOTORS BENCH (380-525 V)		
PROJ:51049		RADICAL		VU	UF
FORMAT A3		51049		IED	FOLIO
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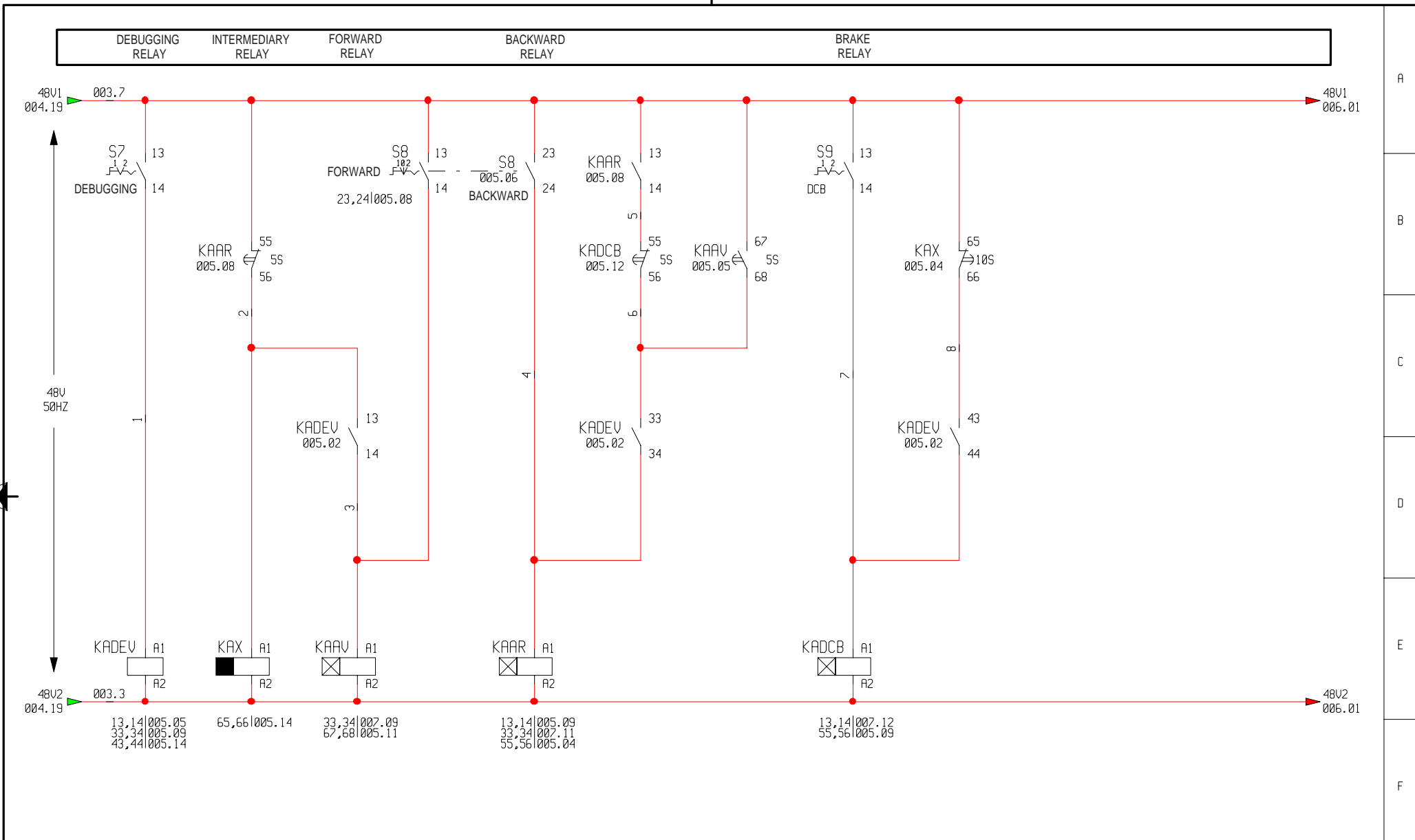


NOTA: BOUTONNERIE ET SIGNALISATION  
SUR FACE AVANT CONSOLE

Nom		Date	CONTROL SEQUENCE				
Etabli	6 MEUNIER	12.05.97	MOTORS BENCH (380-525 V)				
Saisi	6 MEUNIER	12.05.97					
Contrôle saisie	F BROSSARD	12.05.97					
PROJ:51049		RADICAL	VU	UF	CD	IED	FOLIO
FORMAT A3		51049				01	004



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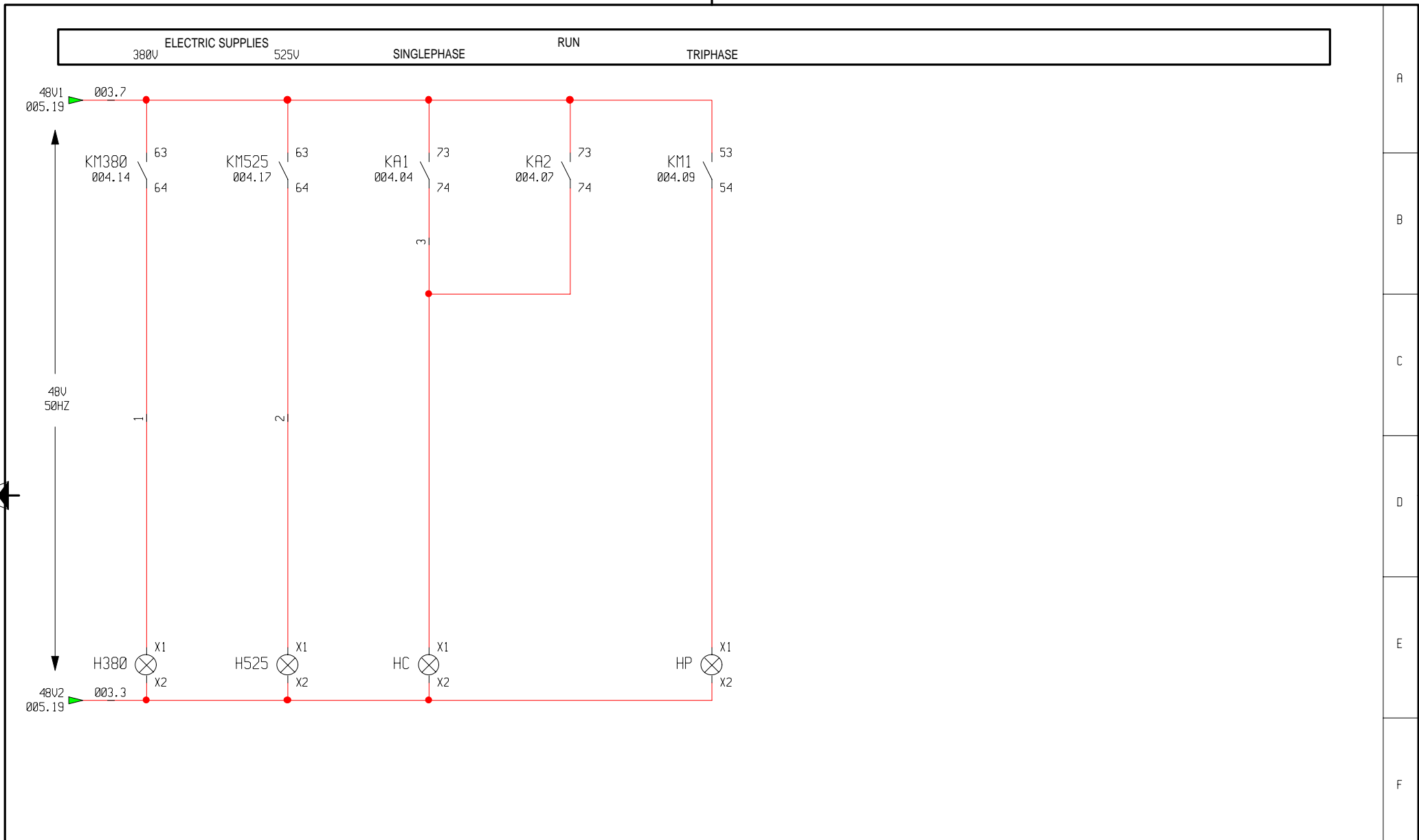
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SUR FACE AVANT CONSOLE

Nom		Date	
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Saisi	G MEUNIER	12.05.97	MOTORS BENCH (380-525 V)
Controle saisie	F BROSSARD	12.05.97	
PROJ: 51049		RADICAL	VU UF CD
FORMAT A3		51049	IED FOLIO
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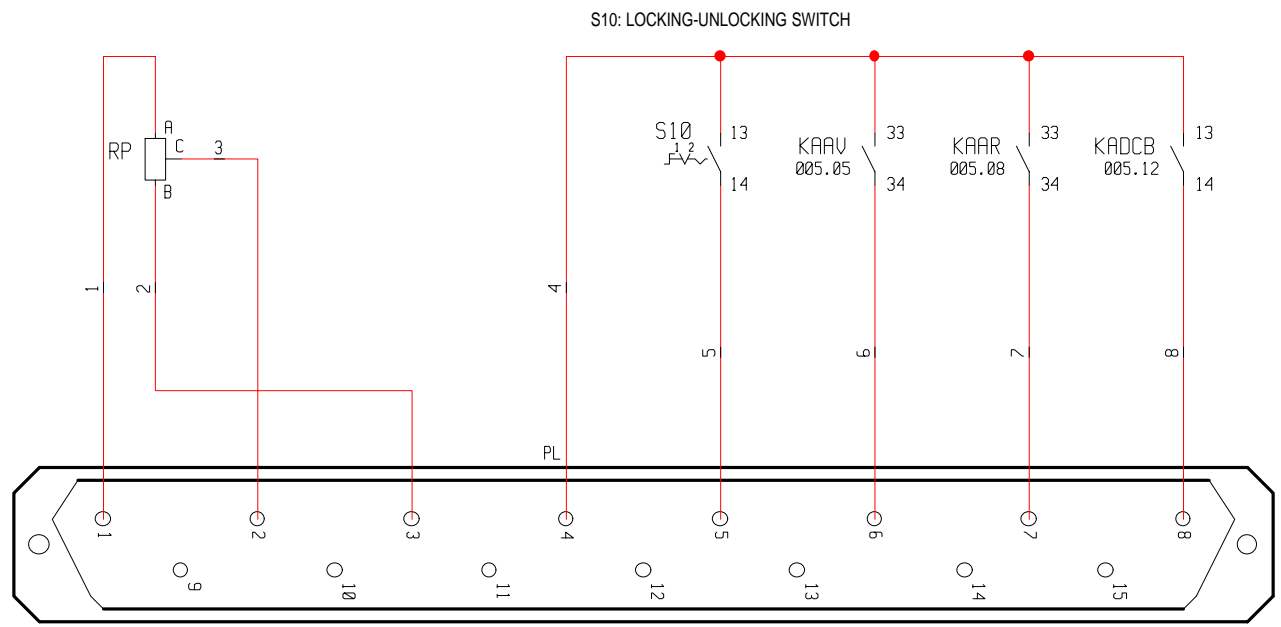


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SUR FACE AVANT CONSOLE

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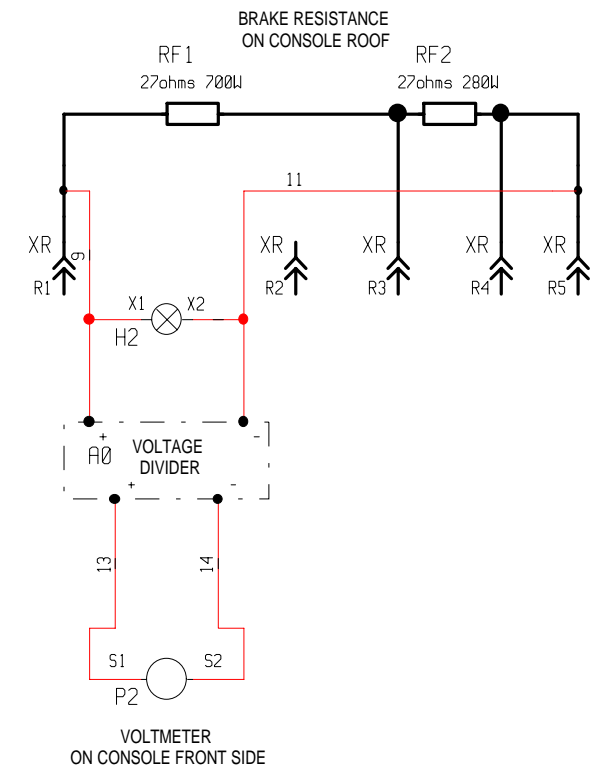
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Saisi	G MEUNIER	12.05.97	
Contrôle saisie	F BROSSARD	12.05.97	
PROJ:51049		MOTORS BENCH (380-525 V)	
<b>Telemecanique</b>		RADICAL	VU   VF   CD
FORMAT A3		51049	IED   FOLIO
		01	006

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S10: LOCKING-UNLOCKING SWITCH

VIEW ON SEAM SIDE  
**PC3**  
 SUB D 56 PIN CONNECTION  
 ON CONSOLE FRONT SIDE



BRAKE RESISTANCE  
 ON CONSOLE ROOF

VOLTMETER  
 ON CONSOLE FRONT SIDE

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Nom		Date		CONTROL SEQUENCE					
Etabli		12.05.97							
Saisi		12.05.97							
Contrôle saisie		12.05.97		MOTORS BENCH (380-525 V)					
		PROJ:51049		RADICAL		VU   VF   CD		IED FOLIO	
		FORMAT A3		51049				01 007	

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# DEVICES OPERATING LEGEND

REFERENCE	PAGE COL	OPERATING DESCRIPTION	SUPPLIER	EQUIPMENT
Q0	003.05	CONTACT BREAKER	TELEMECANIQUE	LD4LC040E
Q0	003.05	PROTECTION MODULE	TELEMECANIQUE	LB1LC04L53
Q0	003.05	COIL 240 V 50 HZ	TELEMECANIQUE	LX1LC240
Q0	003.05	HANDLE + DRILL-PLATE	TELEMECANIQUE	LA9LC530
Q1	003.11	MOTOR CIRCUIT BREAKER	TELEMECANIQUE	GK3EF40
Q1	003.11	ADDITIONAL CONTACT START-STOP	TELEMECANIQUE	GK2AX10
Q1	003.11	EXTERIOR CONTROL	TELEMECANIQUE	GK3AP03
F1	003.02	NEUTRAL FUSE SUPPORT	TELEMECANIQUE	DF6N10
F2	003.03	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F2	003.03	FUSE CARTRIDGE aM	TELEMECANIQUE	DF2-CA02
F3	003.02	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F3	003.02	FUSE CARTRIDGE gl	TELEMECANIQUE	DF2-CN04
F4	003.03	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F4	003.03	FUSE CARTRIDGE aM	TELEMECANIQUE	DF2-CA04
F5	003.02	FUSE SUPPORT	TELEMECANIQUE	DF6AB10
F5	003.02	FUSE CARTRIDGE aM	TELEMECANIQUE	DF2-CA04
T1	003.02	SINGLEPHASE TRANSFORMER	LEGRAND	250VA 220-48V
P1	003.12	VOLTMETER	IME03	GALVA10UCC96X96
P1	003.12	"BRAKING" LABEL		
A0	007.17	VOLTAGE DIVIDER	IME03	DIV1000-100V1mA
P2	003.16	AMMETER 0-40 A	SOCOME	17200404
P2	003.16	"MOTOR I" LABEL		
T1	003.13	INTENSITY TRANSFORMER	SOCOME	172T0540
PC1	003.13	MARTIN LUNEL PLUG 16-25A	LEGRAND	H57568
PC2	003.17	P17 CONNECTOR 16A 3P + E 380 V	LEGRAND	H57568
PC2	003.17	PE BLANKING PLUG	LEGRAND	12mm
XR (5)	003.15	AR TERMINAL (BRAKING R)	TELEMECANIQUE	REF 32903
XS (2)	004.07	AR TERMINAL	TELEMECANIQUE	REF 32903
XC (2)	003.08	AR TERMINAL	TELEMECANIQUE	REF 32903
KA1	004.04	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D901E7
KA1	004.04	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN31
KA2	004.07	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D0901E7
KA2	004.07	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN31
KN1	004.09	COMMUTATOR POWER	TELEMECANIQUE	LC1D4011E7
KN1	004.09	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KN380	004.14	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D4011E7
KN380	004.14	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KN525	004.17	COMMUTATOR SWITCH	TELEMECANIQUE	LC2D4011E7
KN525	004.17	ADDITIONAL CONTACT BLOCK	TELEMECANIQUE	LA1DN20
KADEV	005.02	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7

REFERENCE	PAGE COL	OPERATING DESCRIPTION	SUPPLIER	EQUIPMENT
KAX	005.04	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAX	005.04	DE-ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA3DR2
KAAV	005.05	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAAV	005.05	ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA2DT2
KAAR	005.08	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KAAR	005.08	ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA2DT2
KADCB	005.12	AUXILIARY CONTACTOR	TELEMECANIQUE	CA2DN31E7
KADCB	005.12	ENERGISED TIMER ADDITIONAL PART	TELEMECANIQUE	LA2DT2
H1	004.02	INDICATOR LIGHT	TELEMECANIQUE	XB2BV63
H1		48 V BULB	TELEMECANIQUE	DL1-CE048
H1		SWITCH ON LABEL	TELEMECANIQUE	ZB2BY2101
S0	003.09	PUSH-BUTTON EMERGENCY STOP	TELEMECANIQUE	XB2BT42
S0	003.09	OPENING CONTACT	TELEMECANIQUE	ZB2BE102
S0	003.09	60 MM LABEL "EMERGENCY STOP"	TELEMECANIQUE	ZB2 BY 9130
S01	004.04	PUSH-BUTTON EMERGENCY STOP CASING	TELEMECANIQUE	XAL-J174
S1	004.04	PUSH-BUTTON	TELEMECANIQUE	XB2BA42
S1	004.04	LABEL "CONTROL STOP"	TELEMECANIQUE	ZB2BY2101
S2	004.04	COMMUTATOR BODY	TELEMECANIQUE	ZB2BZ103
S2	004.04	COMMUTATOR HEAD	TELEMECANIQUE	ZB2B02
S2	004.04	LABEL "220 V 525 V"	TELEMECANIQUE	ZB2BY2101
S3	004.09	PUSH-BUTTON	TELEMECANIQUE	XB2BA42
S3	004.09	LABEL "POWER STOP"	TELEMECANIQUE	ZB2BY2101
S5	004.11	COMMUTATOR	TELEMECANIQUE	XB2B021
S5	004.11	LABEL "SHUNT SA SB 0-1"	TELEMECANIQUE	ZB2BY2101
S6	004.14	PUSH-BUTTON	TELEMECANIQUE	XB2BA42
S6	004.14	LABEL "PLATFORM STOP"	TELEMECANIQUE	ZB2BY2101
S7	005.02	COMMUTATOR	TELEMECANIQUE	XB2B021
S7	005.02	LABEL "DEBUGGING 0-1"	TELEMECANIQUE	ZB2BY2101
S8	005.06	COMMUTATOR	TELEMECANIQUE	XB2B033
S8	005.06	LABEL "FW 0 RV"	TELEMECANIQUE	ZB2BY2101
S9	005.12	COMMUTATOR	TELEMECANIQUE	XB2B021
S9	005.12	LABEL "BRAKE 0-1"	TELEMECANIQUE	ZB2BY2101
S10	007.08	COMMUTATOR	TELEMECANIQUE	XB2B021
S10	007.08	LABEL "RUN 0-1"	TELEMECANIQUE	ZB2BY2101
HC	004.04	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BH3361

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											Nom		Date		OPERATING LEGEND					
											Etabli		6 MEUNIER						12.05.97	
											Saisi		6 MEUNIER						12.05.97	
											Contrôle saisie		F BROSSARD		12.05.97		MOTORS BENCH (380-525 V)			
													PROJ:51049		RADICAL		VU UV CD		IED FOLIO	
													FORMAT A3		51049		01 008			

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# DEVICES OPERATING LEGEND

REFERENCE	PAGE COL	OPERATING DESCRIPTION	SUPPLIER	EQUIPMENT
HC	004.04	WHITE CAP	TELEMECANIQUE	ZB2BW911
HC	004.04	"CONTROL ENERGISED" LABEL	TELEMECANIQUE	ZB2BY2101
HC	004.04	48 V BULB	TELEMECANIQUE	DL1CE048
HP	004.09	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BW3361
HP	004.09	WHITE CAP	TELEMECANIQUE	ZB2BW911
HP	004.09	"POWER ENERGISED" LABEL	TELEMECANIQUE	ZB2BY2101
HP	004.09	48 V BULB	TELEMECANIQUE	DL1CE048
H380	004.16	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BW3361
H380	004.16	"380 V" LABEL	TELEMECANIQUE	ZB2BY2101
H380	004.16	48 V BULB	TELEMECANIQUE	DL1CE048
H525	004.17	LUMINOUS PUSH-BUTTON	TELEMECANIQUE	XB2BW3361
H525	004.17	"525 V" LABEL	TELEMECANIQUE	ZB2BY2101
H525	004.17	48 V BULB	TELEMECANIQUE	DL1CE048
H2	007.16	INDICATOR LIGHT	TELEMECANIQUE	XB2BU75
H2	007.16	"BRAKING" LABEL	TELEMECANIQUE	ZB2BY2101
H2	007.16	130 V BULB	TELEMECANIQUE	DL1CE130
RP	007.16	2.2 K POTENTIOMETER	TELEMECANIQUE	SZ1RV1202
RF1	007.16	27 OHMS 700 W RESISTANCE	TELEMECANIQUE	VY1ADR027W700
RF2	007.16	27 OHMS 280 W RESISTANCE	TELEMECANIQUE	VY1ADR027W280
PC3	007.07	PIN PLUG	TELEMECANIQUE	SUB-D 15
X380		TERMINAL + ACCESSORIES	TELEMECANIQUE	AB1-VV1035U
X525		TERMINAL + ACCESSORIES	TELEMECANIQUE	AB1-VV1035U
COFFRET		BLUE CASING + BASEPLATE	TELEMECANIQUE	ACMBP6525

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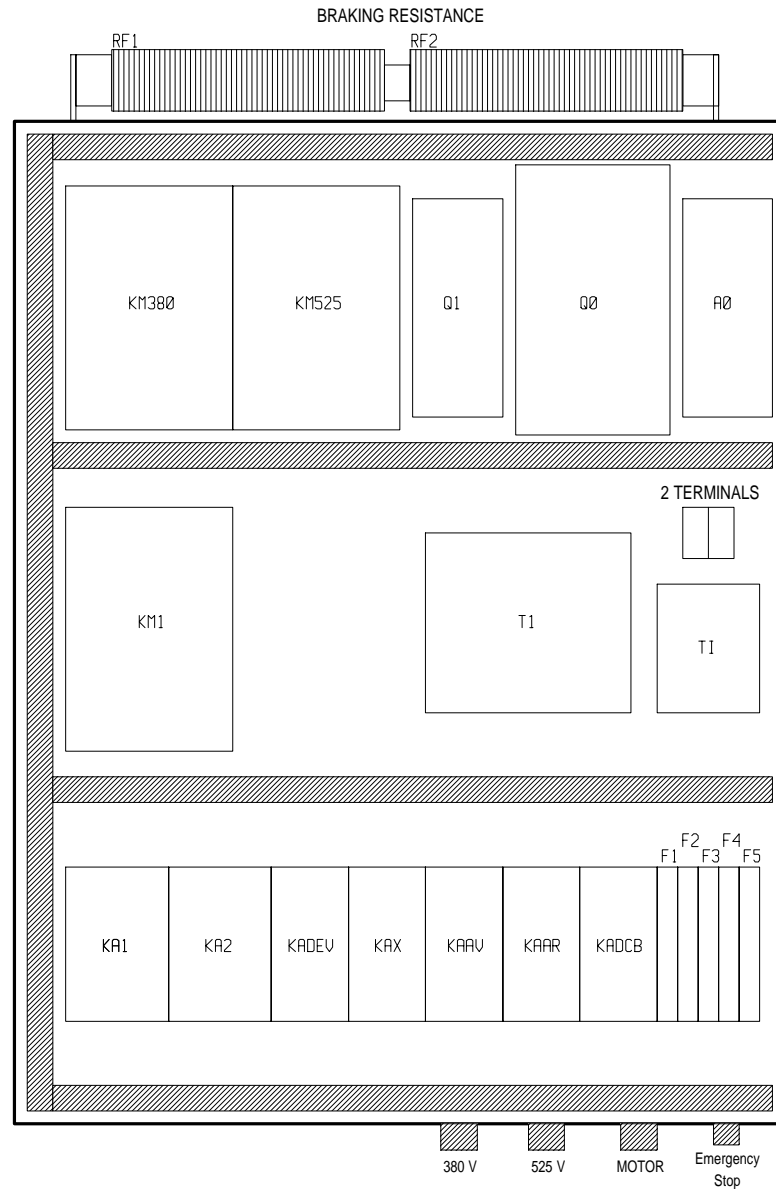
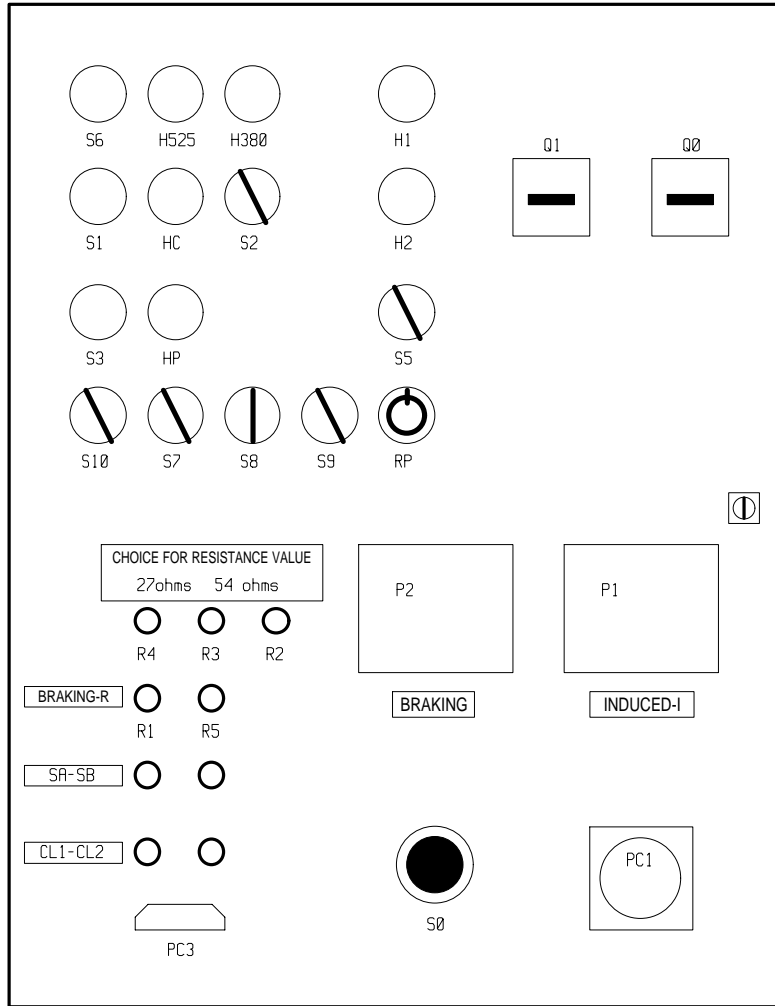
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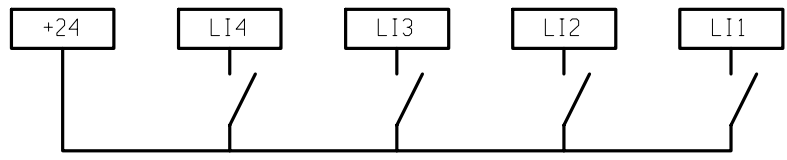
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											<table border="1"> <tr><td colspan="2">Nom</td><td>Date</td></tr> <tr><td>Etabli</td><td>6 MEUNIER</td><td>12.05.97</td></tr> <tr><td>Saisi</td><td>6 MEUNIER</td><td>12.05.97</td></tr> <tr><td>Controle saisie</td><td>F BROSSARD</td><td>12.05.97</td></tr> </table>		Nom		Date	Etabli	6 MEUNIER	12.05.97	Saisi	6 MEUNIER	12.05.97	Controle saisie	F BROSSARD	12.05.97	<table border="1"> <tr><td colspan="6">OPERATING LEGEND</td></tr> <tr><td colspan="6">MOTORS BENCH (380-525 V)</td></tr> <tr><td colspan="2">PROJ:51049</td><td colspan="2">RADICAL</td><td colspan="2">VU UV CD</td></tr> <tr><td colspan="2">51049</td><td colspan="2">01</td><td colspan="2">FOLIO 009</td></tr> <tr><td colspan="2">FORMAT A3</td><td colspan="4"></td></tr> </table>						OPERATING LEGEND						MOTORS BENCH (380-525 V)						PROJ:51049		RADICAL		VU UV CD		51049		01		FOLIO 009		FORMAT A3					
Nom		Date																																																										
Etabli	6 MEUNIER	12.05.97																																																										
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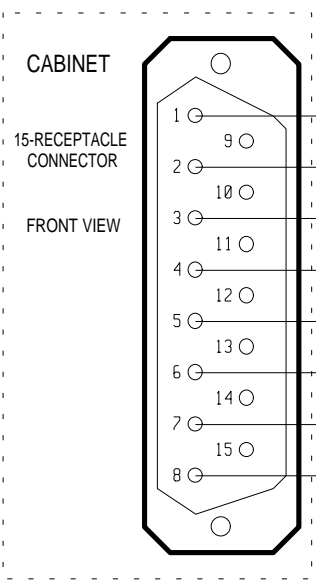


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Nom		Date		
Etabli	6 MEUNIER	12.05.97	DOOR AND CABINET	
Saisi	6 MEUNIER	12.05.97	MOTORS BENCH (380-525 V)	
Controle saisie	F BROSSARD	12.05.97		
PROJ:51049		RADICAL		VU   VF   CD
Telemecanique		51049		IED   FOLIO
FORMAT A3				01   010



LI1: UNLOCK  
 LI2: FW  
 LI3: RV  
 LI4: JOB STEP BY STEP



- BLUE COM
- RED AI1
- GREEN +10
- GREY +24
- WHITE LI1
- ROSE LI2
- YELLOW LI3
- BROWN LI4

VZ3N006 TYPE CONNECTOR  
 (BLADES CONNECTOR)

TOP VIEW



ATV66

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Etabli		Nom		Date		CABINET-ATV66 CONNECTION									
Saisi		6 MEUNIER		12.05.97											
Contrôle saisie		F BROSSARD		12.05.97											
PROJ:51049			RADICAL			VU		VF		CD		IED		FOLIO	
FORMAT A3			51049									01		011	





## MAINTENANCE MANUAL MAINTENANCE

### 1°) Exchange and repair

Altistart 46 is a product that can be repaired. The purpose of this document is to help you to repair these products.

In case of major defect, or for addition of new functions, products updating will be necessary. In this case, information will be transmitted to all SCHNEIDER networks.

The time of delivery of the repaired or new element will be given by the dealer or the agency. The quality of the replacement service is based on stocks constituted at Evreux, in the branches and by the official dealers. The normal time of change processing at the SRES Evreux service is 24/48 hours.

### 2°) Diagnosis

#### 2-1°) Indicator lights

Red LED : starter lock

- on: fault presence
- blinking: automatic fault reset

Green LED: starter energised

- on: starter energised,
- off: starter de-energised.

#### 2-2°) Displayable faults

List of faults that can be read with the visual display additional part.

- OCF: Overcurrent Fault
- InF: Recognition of rating
- PiF: Phase inversion Fault
- PHF: Phase Fault
- FrF: Frequency Fault
- USF: Supply Fault (power supply fault, when start mode is required)
- LrF: Locked rotor Fault
- ULF: Under Load Fult (motor)
- StF: Start Fault (too long)
- SLF: Serial Link Fault (inner)
- ETF: External Fault
- OLF: Over Load Fault (motor thermal protection fault)
- OHF: Over Heat Fault (starter thermal protection fault).

## MAINTENANCE MANUAL MAINTENANCE

### **3°) Preventive maintenance**

Altistart 46 does not need preventive check-up, however, at regular time, we advise to:

- check connections quality and tightening,
- check ventilation efficiency and level of temperature near the starter,
- wipe off the dust on the starter, if necessary.

### **4°) Intervention**

#### 4-1°) On-site intervention

The customer's on-site assistance will be ensured by technicians and engineers of the country of which the customer depend on.

#### 4-2°) Telephone assistance

The first level of telephone assistance is ensured by the technicians of the Schneider Electric agencies branches from which the customer depends on.

The second level of telephone assistance is done through the direct line of Global Help Desk:

Tel: 33-1 41 39 39 00

Fax: 33-1 41 39 37 72

## MAINTENANCE MANUAL TROUBLE SHOOTING

### Control of various parts

---

#### Product software version:

The starter software version can be seen through a window after additional part disconnection. It is also possible to know the software version with PC software. The following instructions have to be performed:

- if off-line mode, select < link > then < connection > ,
- if on-line mode, select < configuration > then < starter identification > .

#### Software versions evolution:

Version	Date of selling	Corrections and changes
V1.1 IE02	96-36	<ul style="list-style-type: none"> <li>• original version</li> </ul>
V1.2 IE03	97-01	<ul style="list-style-type: none"> <li>• cascade starting</li> <li>• operating hourmeter since last reset (through the line)</li> <li>• last five faults stored</li> <li>• possibility of lock out protection</li> <li>• steady-state current limiting</li> </ul>
V1.2 IE04	97-07	<ul style="list-style-type: none"> <li>• introduction of a 300 ms time delay on the RUN recognition</li> <li>• introduction of a 500 ms fixed time delay between the end of braking and stand-by status in order to correct "OCF"</li> <li>• turn off of the reading status of the "standard-serious" switch status (loss of configuration)</li> <li>• Recognition of the unbalance of the phases on the calculation of the engine effective current</li> <li>• (motor thermal protection)</li> <li>• OLF clearance if <math>125 &gt; LTH &gt; 110</math>. The motor starts if a 2-wire control is on</li> <li>• TBS value equal to 0 during powering up, even though its value is different</li> </ul>
V1.2 IE05	97-17	<ul style="list-style-type: none"> <li>• refused of to reset to zero the parameter TFR (hourmeter) when the engine is running</li> <li>• on-factory adjustment of parameters IPR, TPR and TBS (local mode) used only upon the first product powering up</li> <li>• assignment of LI to LII (motor preheating) or LIH (faults inhibition)</li> <li>• default startup time when loaded went to 4 seconds</li> <li>• removal of the starter thermal protection calculated by the software on C11, C17, C21, C25 and C32 calibre</li> <li>• readjustment of the rated current value by on-factory setting (1130A) for M12 calibre</li> </ul>
V1.2 IE06	97-40 (except T1) 97-42 (size 1)	<ul style="list-style-type: none"> <li>• correction of the anomaly concerning the micro controller upon unshunting with the bypass function</li> <li>• correction of the anomaly following a simultaneous running instruction with a stopping instruction. Avoid the current pulse in the engine as well as startup in current control</li> <li>• correction of the anomaly concerning a random startup following a series of transient power cutoffs.</li> </ul>
V1.3IE07	98-29	<ul style="list-style-type: none"> <li>• correction of the anomaly during disturbed networks, earthing of neutral</li> <li>• correction of dielectric current of thyristors</li> <li>• adding of functionality such as the reading of the active power of motors on VW3G46101 visual display unit, and with the software, the resetting of all defects that can be reset by logic input L1, possibility of adjustment of deceleration gain by the PC software.</li> </ul>

## MAINTENANCE MANUAL TROUBLE SHOOTING

### The last five faults evolution:

A PC software version superior to V1.2. is required.

### Thyristors tests:

Proceeding for on-site test of characteristics dispersion of Altistart 46 thyristors leakage current:

- switch off the starter,
- measure the impedance with the ohmmeter through a device supplying at least 3 V, at the thyristor pole terminals (anode/cathode), that is to say the control and protection circuits are to be disconnected and the engine off,
- a resistance at least superior to 10 kilo-ohms has to be found,
- otherwise, change bridge arm.

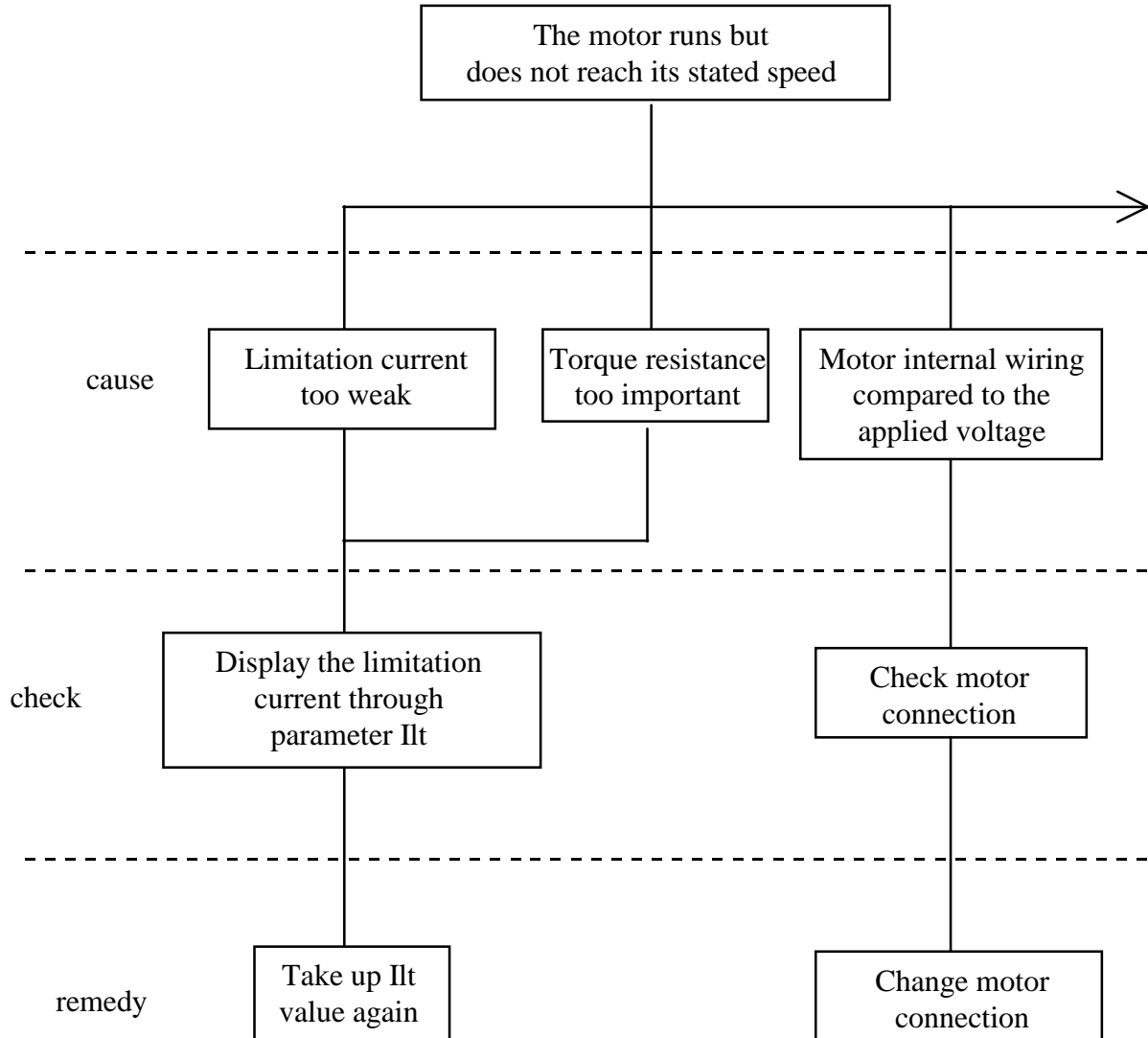
If, for practical reasons, you do not want to disconnect the protection and control circuits, top to bottom terminal resistance can be measured. Minimum resistance has to be 50 kilo-ohms.

MAINTENANCE MANUAL  
TROUBLE SHOOTING

Installation malfunctioning:

**The motor runs but does not reach his stated speed**

---

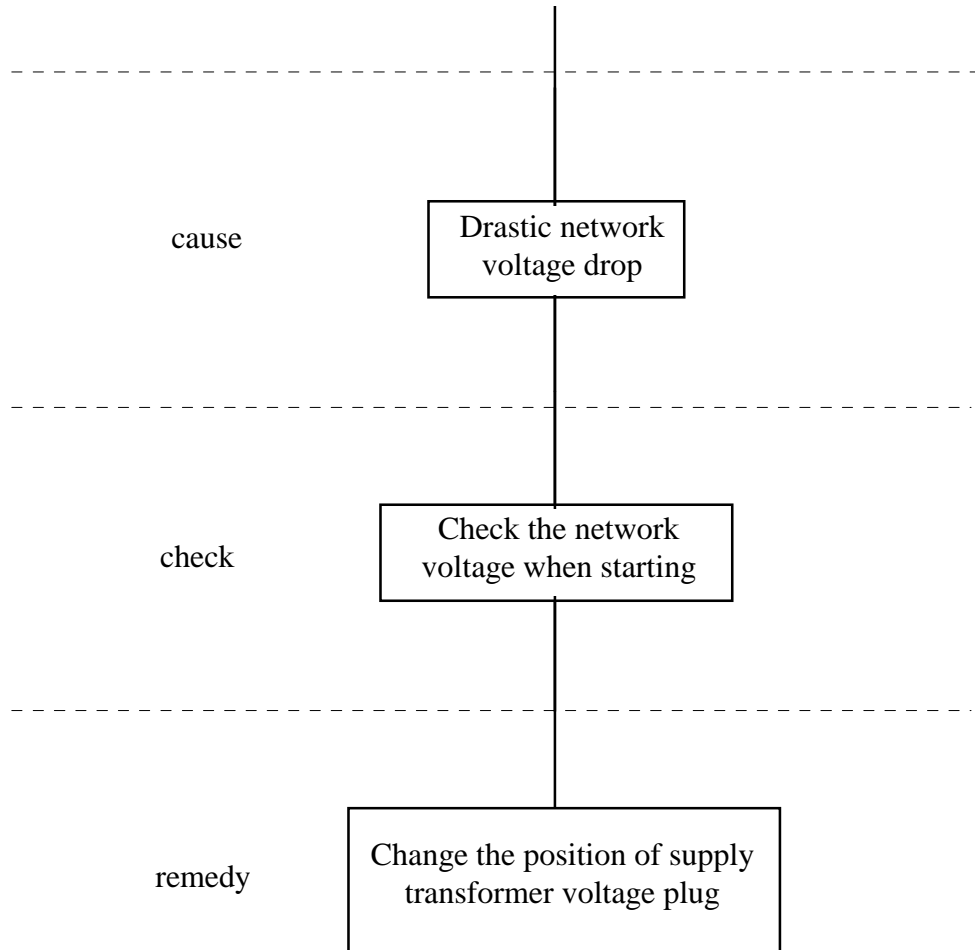


MAINTENANCE MANUAL  
TROUBLE SHOOTING

Installation malfunctioning:

**The motor runs but does not reach its stated speed**

---

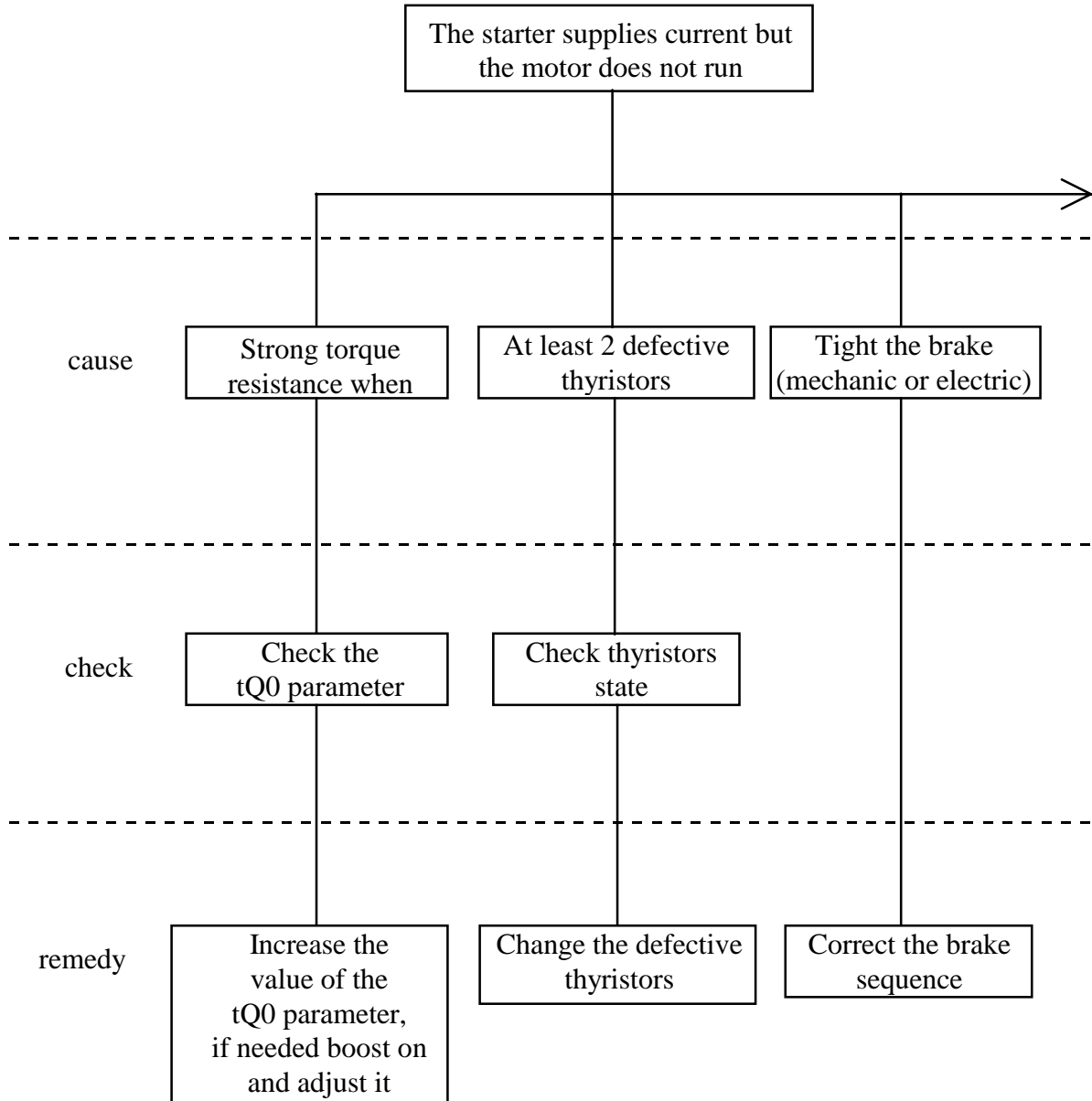


MAINTENANCE MANUAL  
TROUBLE SHOOTING

Installation malfunctioning:

**The starter supplies current but the motor does not run.**

---

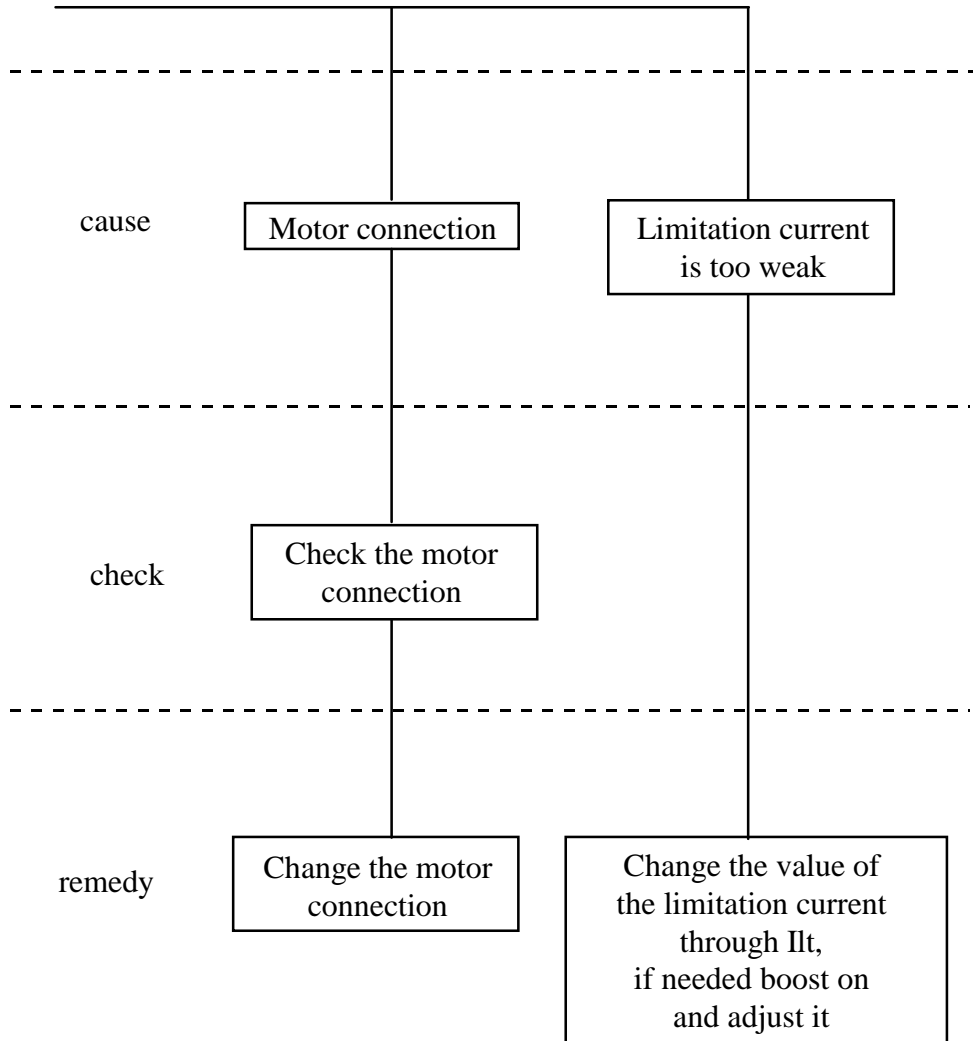


MAINTENANCE MANUAL  
TROUBLE SHOOTING

Installation malfunctioning:

**The starter supplies current but the motor does not run.**

---



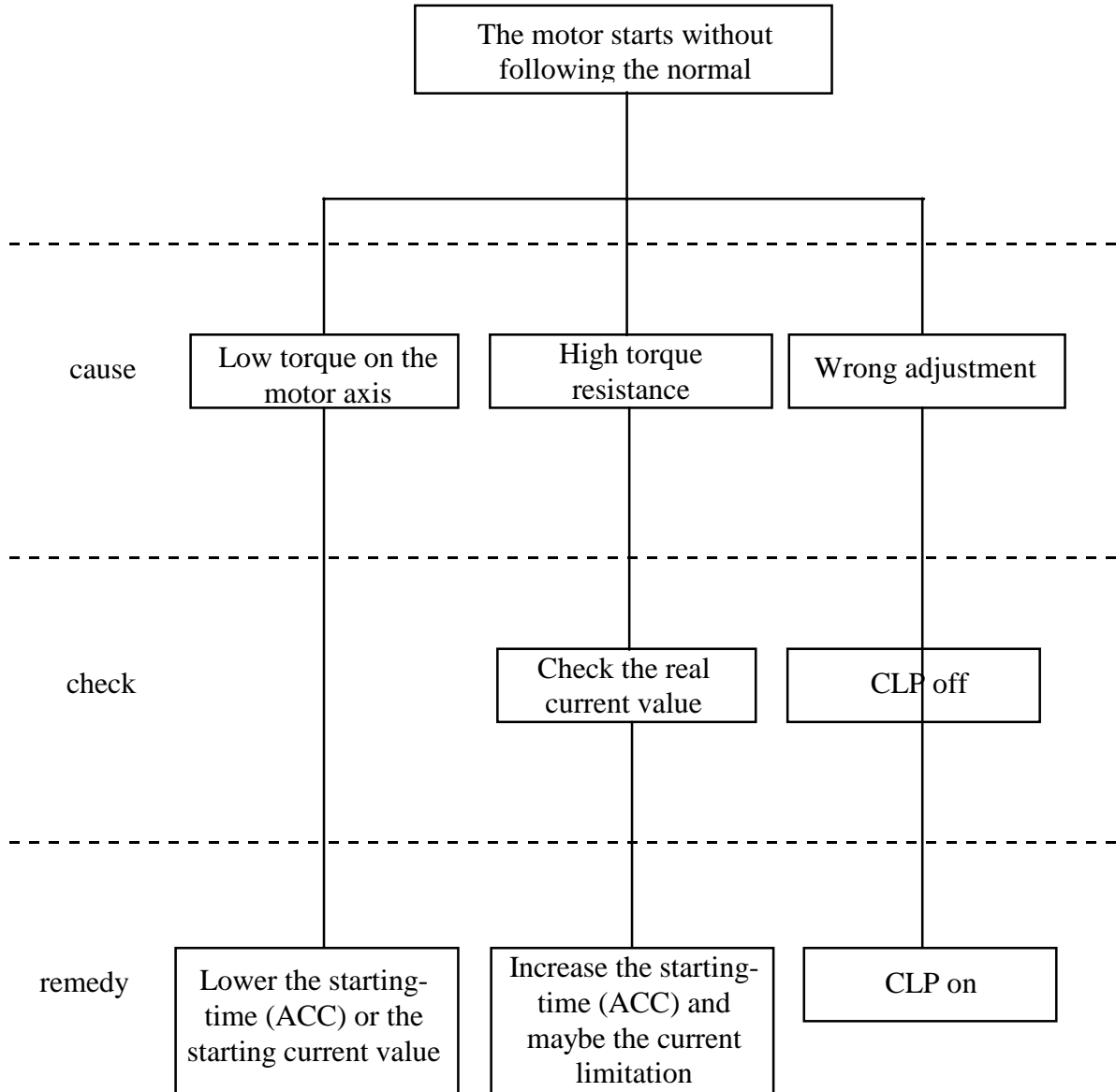


MAINTENANCE MANUAL  
TROUBLE SHOOTING

Installation malfunctioning:

**The motor starts without following the normal acceleration.**

---

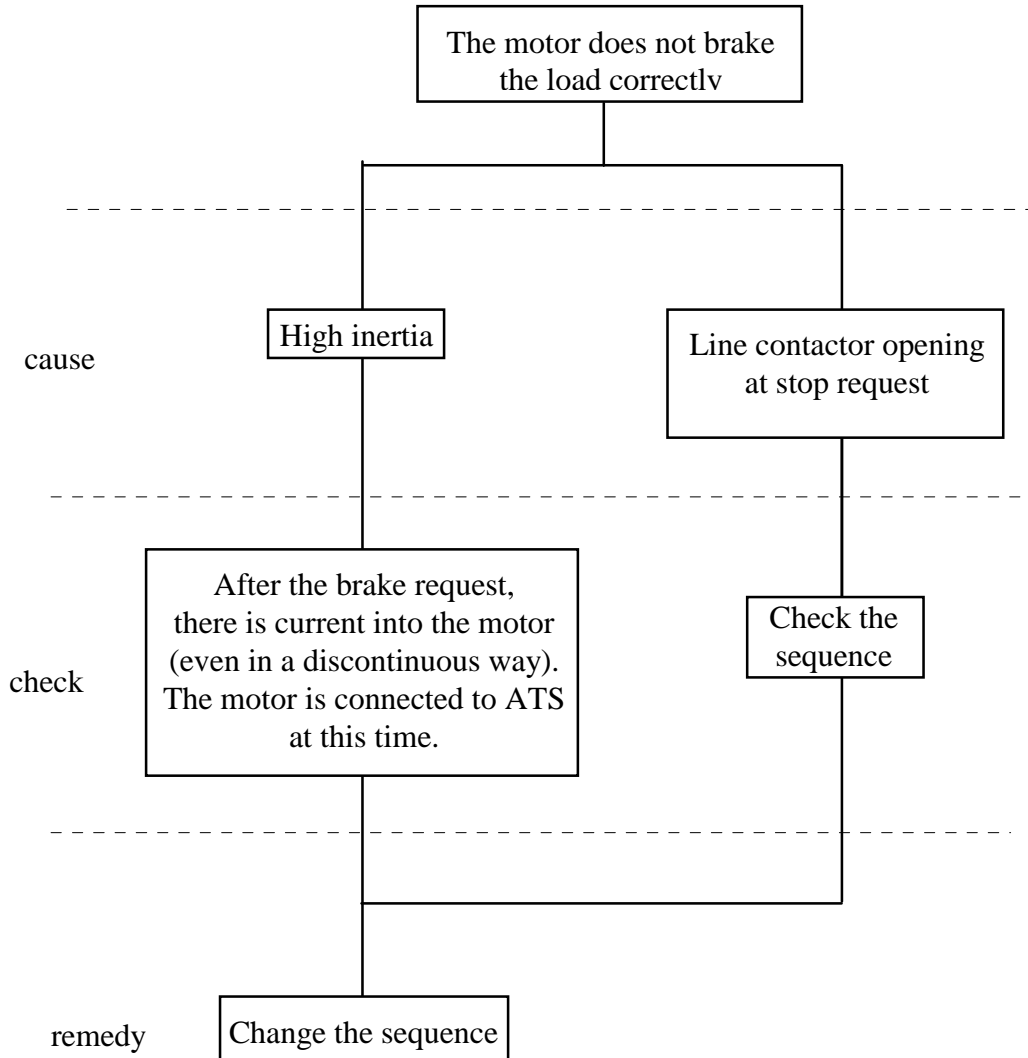


MAINTENANCE MANUAL  
TROUBLE SHOOTING

Installation malfunctioning:

**The motor does not brake the load correctly**

---



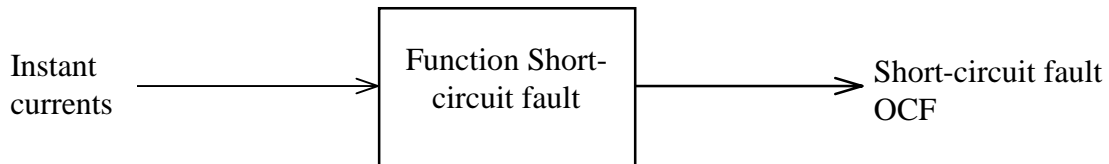
## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

**OCF (Overcurrent Fault)**

---

### Measurement principle:



If instant current  $> 13 \times ICL$  (intensity calibrated for the starter), then protection active in all operative phases.

Note: This function is only protecting from short-circuits on motor side.

### Up to now experience:

- Short-circuit at starter outlet.
- Internal short-circuit.
- Bypass contactor stuck when starting is requested.
- 2 Consecutive starts while the motor is running.

## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

**InF** (recognition of rating)

---

**Up to now experience:**

- Internal connection fault.
- Control card fault.

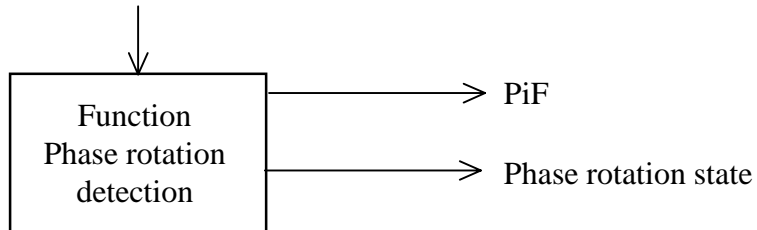
Breakdown search from the displayed fault:

**PiF** (Phase inversion Fault)

---

**Measurement principle:**

Phase rotation fault assignment



The function is active at each start order.

If phase rotation fault is selected, check if the phase rotation of the network voltage is in conformity with the one selected

123 direct,

321 indirect,

otherwise, the fault is generated.

**Up to now experience:**

- Network phases rotation does not suit the selection done by PHR.

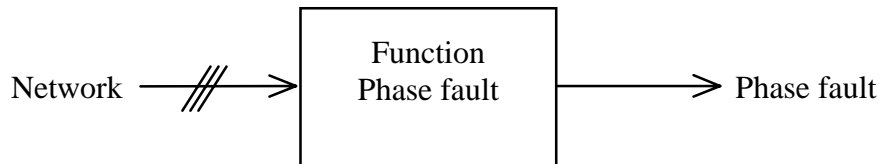
## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

### **PHF (Phase Fault)**

---

#### **Measurement principle:**



This phase fault can be generated by two sub-defects:

- No current supply in one phase or in all network phases during more than 200 ms. Active during normal operation.
- Synchronisation fault: including thyristor, fault, synchronisation circuit fault, network disturbance inconsistent with synchronisation.

#### **Up to now experience:**

- No current supply in network phase ( $t \geq 200$  ms).
- Starter not supplied with current on L1-L2-L3.
- Possibility of line fuse melting.
- Disturbed network (1).
- Phases off-balance due to insulation defect on IT rate (1).
- Insulation defect between via of a printed circuit (metal hole allowing to connect two faces of a printed circuit) and R505 resistance (control card). Corrected week 19/98.
- Starting end on a high inertia, low opposing torque application. Use of a self maintained bypass with external thermal protection.
- Problems with IR thyristors (according to VVD info n°8).
- During a start-order on contactor with software version inferior to V1.2IE03.
- Motor power too low compared to starter power:  
4 kW for sizes 1, 2, 3,  
7.5 or 11 kW for sizes 4 and 5.
- Synchronisation connectors absent or wrongly positioned.
- With software version V1.1IE02, fault on very little loaded pump.
- Cable too long between motor and starter (1).
- Starter disrupted by a DC converter (1).
- Only one thyristor in short-circuit.

(1) Defect corrected by version V1.2IE07.

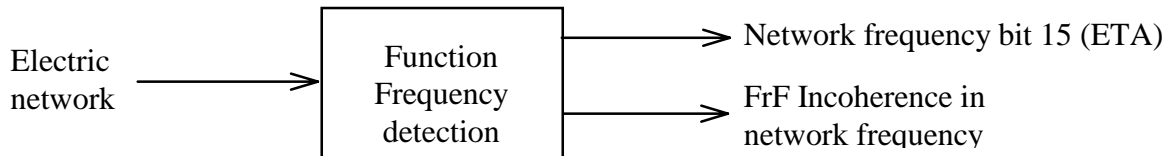
MAINTENANCE MANUAL  
TROUBLE SHOOTING

Breakdown search from the displayed fault:

**FrF** (Frequency Fault)

---

**Measurement principle:**



The detection is active at each switching-on. It performs successive tests of network frequency measurements, filtering of result around 50 or 60 Hz, iteration till decision will be made: FrF or 50 or 60 Hz.

**Up to now experience:**

- Overlimit network frequency when switching-on..

## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

**USF** (power supply fault, when start mode is required)

---

**Up to now experience:**

- Installed fault with R1 as fault relay.
- When start is ordered with software version inferior to V1.2IE03 on simultaneous order sketch, control voltage/power voltage.



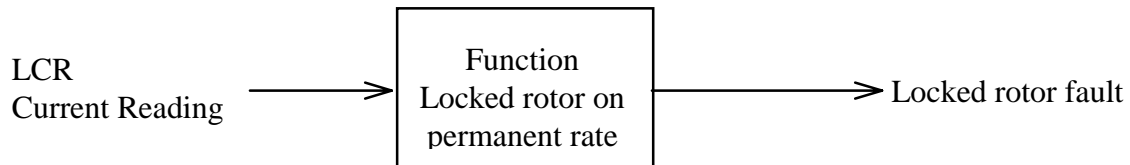
MAINTENANCE MANUAL  
TROUBLE SHOOTING

Breakdown search from the displayed fault:

**LrF** (Locked rotor Fault)

---

**Measurement principle:**



If the current reading in shunted permanent rate is superior to  $5 \times I_n$  during 200 ms, a fault may occur.

**Up to now experience:**

- Detection of current superior to  $5 \times I_n$  in permanent rate ( $t \geq 200$  ms) only on shunted rate.

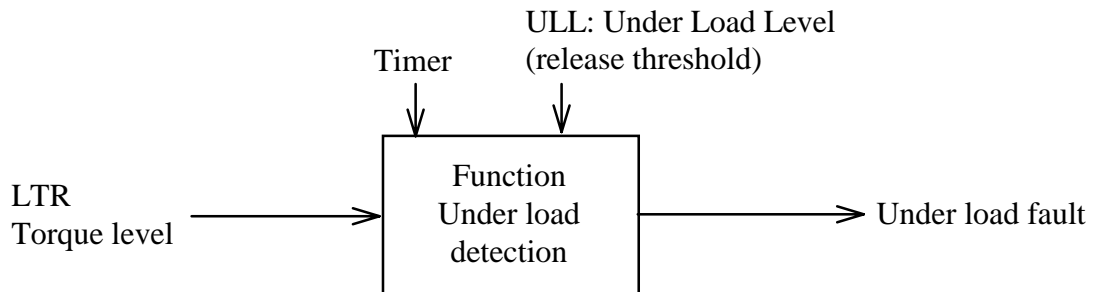
MAINTENANCE MANUAL  
TROUBLE SHOOTING

Breakdown search from the displayed fault:

**ULF** (Under Load Fault - motor -)

---

**Measurement principle:**



Under load fault is generated only in permanent rate.

**Up to now experience:**

- Inferior load level or unprimed pump. ULL adjustment.

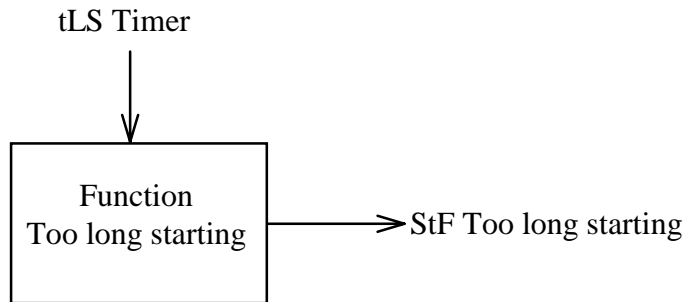
MAINTENANCE MANUAL  
TROUBLE SHOOTING

Breakdown search from the displayed fault:

**STF** (Start Fault — too long)

---

**Measurement principle:**



When the function is validated, the fault is generated if the acceleration phase is longer than the set timer.

**Up to now experience:**

- Wrong adjustment of tLS

## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

**SLF** (Serial Link Fault)

---

**Up to now experience:**

- Connection of the visual display additional part.
- Control card fault.

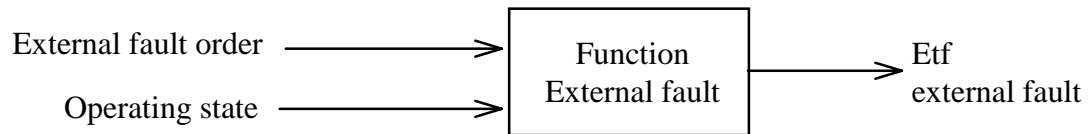
MAINTENANCE MANUAL  
TROUBLE SHOOTING

Breakdown search from the displayed fault:

**E<sub>t</sub>F** (External Fault)

---

**Measurement principle:**



**Up to now experience:**

- LI, affected to LIE, is not connected.

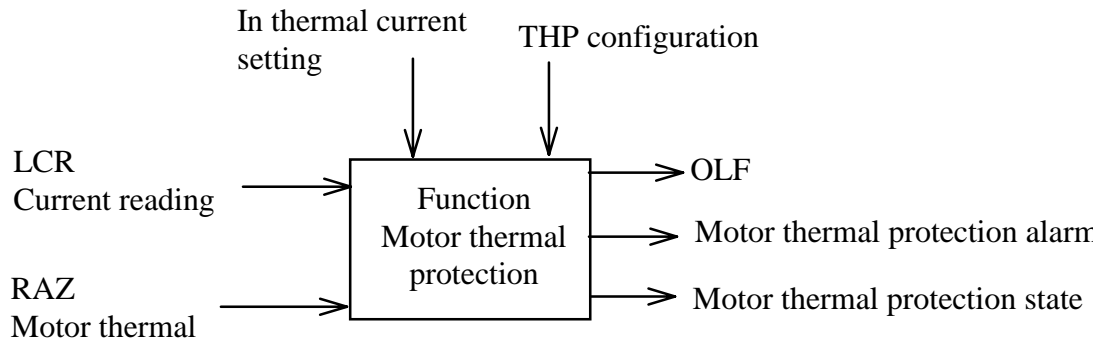
## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

**OLF** (Over Load Fault - motor thermal protection fault)

---

**Measurement principle:**



Ambient temperature 40°C.

LT6 algorithm principle re-employed.

OLF acknowledgement, followed by a start request are done as following:

- on line: assemble the reset bit in CMD (bit 0) then assemble the run bit (bit 5). LI is inactive.
- locally: if LI = LIT, upright front on LI then RUN (LIR),  
if LI ≠ LIT, upright front on LIR.

**Up to now experience:**

- Thermal protection release by sustained motor overload.

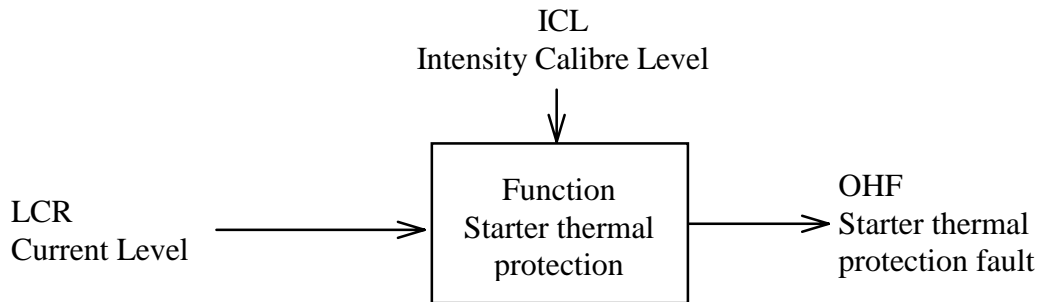
## MAINTENANCE MANUAL TROUBLE SHOOTING

Breakdown search from the displayed fault:

**OHF** (Over Heat Fault — starter thermal protection fault)

---

**Measurement principle:**



The time constants starts are standardised for ambient temperature of 40°. The electronic thermal protection is not insured for C11, C17, C21, C25 and C35 calibre.

*Note:* the protection against insufficient ventilation, or too high ambient temperature, is performed by vigitherm for above mentioned calibre.

Thermal state is saved in the eeprom when the network disappears.

**Up to now experience:**

- Thermal protection released by starter overload.
- Faulty vigitherme.
- Low torque at start (tQ0).
- Check correspondence between motor and starter.

## CHAPTER 5 SUMMARY

Spare parts

Part 1 : Assembly size 1  
Parts list

Part 2 : Assembly size 2  
Parts list

Part 3 : Assembly size 3  
Parts list  
Interconnection drawing

Part 4 : Assembly size 4  
Parts list  
Interconnection drawing

Part 5 : Assembly size 5  
Parts list

Part 6 : Transformation from ATS 23 to ATS 46





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## ATS46 SPARE PARTS

Description	Reference	Remark	Time of delivery
<b>PRODUCTS</b>			
Soft starter 17 A	ATS46D17N	4-language guide	I
	ATS46D17NU	SQUARE D Guide	Z
Soft starter 22 A	ATS46D22N		I
	ATS46D22NU		Z
Soft starter 32 A	ATS46D32N		I
	ATS46D32NU		Z
Soft starter 38 A	ATS46D38N		I
	ATS46D38NU		Z
Soft starter 47 A	ATS46D47N		I
	ATS46D47NU		Z
Soft starter 62 A	ATS46D62N		I
	ATS46D62NU		Z
Soft starter 75 A	ATS46D75N		I
	ATS46D75NU		Z
Soft starter 88 A	ATS46D88N		I
	ATS46D88NU		Z
Soft starter 110 A	ATS46C11N		I
	ATS46C11NU		Z
Soft starter 145A	ATS46C14N		I
	ATS46C14NU		Z
Soft starter 176A	ATS46C17N		I
	ATS46C17NU		Z
Soft starter 210A	ATS46C21N		I
	ATS46C21NU		Z
Soft starter 257A	ATS46C25N		I
	ATS46C25NU		Z
Soft starter 320A	ATS46C32N		I
	ATS46C32NU		Z
Soft starter 410A	ATS46C41N		I
	ATS46C41NU		Z
Soft starter 480A	ATS46C48N		I
	ATS46C48NU		Z
Soft starter 590A	ATS46C59N		I
	ATS46C59NU		Z
Soft starter 660 A	ATS46C66N		I
	ATS46C66NU		Z
Soft starter 790A	ATS46C79N		I
	ATS46C79NU		Z
Soft starter 1000A	ATS46M10N		I
	ATS46M10NU		Z
Soft starter 1200A	ATS46M12N		I
	ATS46M12NU		Z



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## ATS46 SPARE PARTS

### ATS46 Products symbols, options, spares

Description	For starters	Reference	Remark	Time of delivery
Option visual display/setting (A1)		VW3 G46 101	4-language guide	I
		VW3 G46 101U	SQUARE D Guide	Z
Report of visual display/electric cabinet (A3)		VW3 G46 103		B
Communication (C1)		VW3 G46 301	4-language guide	I
		VW3 G46 301U	SQUARE D Guide	Z
PC Connection (A41)		VW3 G46 104		B
PC Software (x5)		VW3 G46 105		B
Line chokes	D17N	VZ1 L015U M17T		I
	D22N	VZ1 L030U 800T		I
	D32N & D38N	VZ1 L040U 600T		I
	D47N to D62N	VZ1 L070U 350T		I
	D75N to C14N	VZ1 L150U 170T		I
	C17N to C25N	VZ1 L250U 100T		I
	C32N	VZ1 L325U 075T		I
	C41N to C48N	VZ1 L530U 045T		I
	C59N to M10N	VZ1 LM10U 024T		I
	M12N	VZ1 LM14U 016T		I

**ATS46 SPARE PARTS**
**ATS46 Products symbols, options, spares**

Description	For starters	Reference	Remark.	Time of delivery	
<b>SPARES</b>					
Control module all calibre	D17 to M12	VX4 G461		C	
Measure cards (and calibre)	ATS46D17N	VX4 G46101		C	
	ATS46D22N	VX4 G46102		C	
	ATS46D32N	VX4 G46103		C	
	ATS46D38N	VX4 G46104		C	
	ATS46D47N	VX4 G46105		C	
	ATS46D62N	VX4 G46106		C	
	ATS46D75N	VX4 G46107		C	
	ATS46D88N	VX4 G46108		C	
	ATS46C11N	VX4 G46109		C	
	ATS46C14N	VX4 G46110		C	
	ATS46C17N	VX4 G46111		C	
	ATS46C21N	VX4 G46112		C	
	ATS46C25N	VX4 G46113		C	
	ATS46C32N	VX4 G46114		C	
	ATS46C41N	VX4 G46115		C	
	ATS46C48N	VX4 G46116		C	
	ATS46C59N	VX4 G46117		C	
	ATS46C66N	VX4 G46118		C	
	ATS46C79N	VX4 G46119		C	
	ATS46M10N	VX4 G46120		C	
ATS46M12N	VX4 G46121		C		
Firing circuit protection card	C41N to M12N	SF1 LG220	idem ATS23	B	
Filter card size 1	D17N to D38N	VX4 G46161		C	
Filter card size 2	D47N to C14N	VX4 G46163		C	
Filter card size 3,4 & 5	C17N to M12N	VX4 G46162		C	
Encapsulated components with 2-thyristors	D17N	VZ3 TM2026M16	idem ATS23	B	
	D22N & D32N	VZ3 TM2055M16	idem ATS23	B	
	D38N	VZ3 TM2090M16		B	
	D47N to D88N	VZ3 TM2130M16	idem ATS23	B	
	C11N	VZ3 TM2160M1601	idem ATS23	B	
	C14N to C25N	VZ3 TM2250M16	idem ATS23	B	
	C32N	VZ3 TM1400M16	idem ATS23	C	
	Plug-in unit with 1-thyristor	C41N and C79N	VZ3 TP2900M16	idem ATS23	B
	Plug-in unit with 2-thyristors	C48N,C59N	VZ3 TP2M12M16	idem ATS23	B
		C66N,M10N and M12N			B
Fans	D75N to C14N	SZ1 XH07	idem ATS23	B	
	C17N to M12N	VZ3 V001	idem ATS23	B	
Fan protection guard	D75N to C14N	VY1 G23 101	idem ATS23	B	
Fan thermoswitch 50°C	D75N to M12N	VZ1 GF01	idem ATS23	B	
Security thermoswitch 90°C	D75N to C32N	SY3 AT0007	idem ATS23	B	
Security thermoswitch 105°C	C41N to M12N	SY3 AT0011	idem ATS23	B	



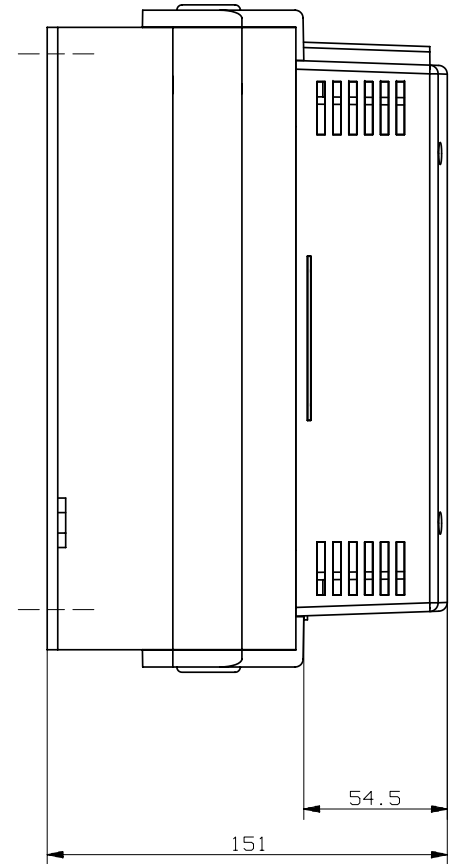
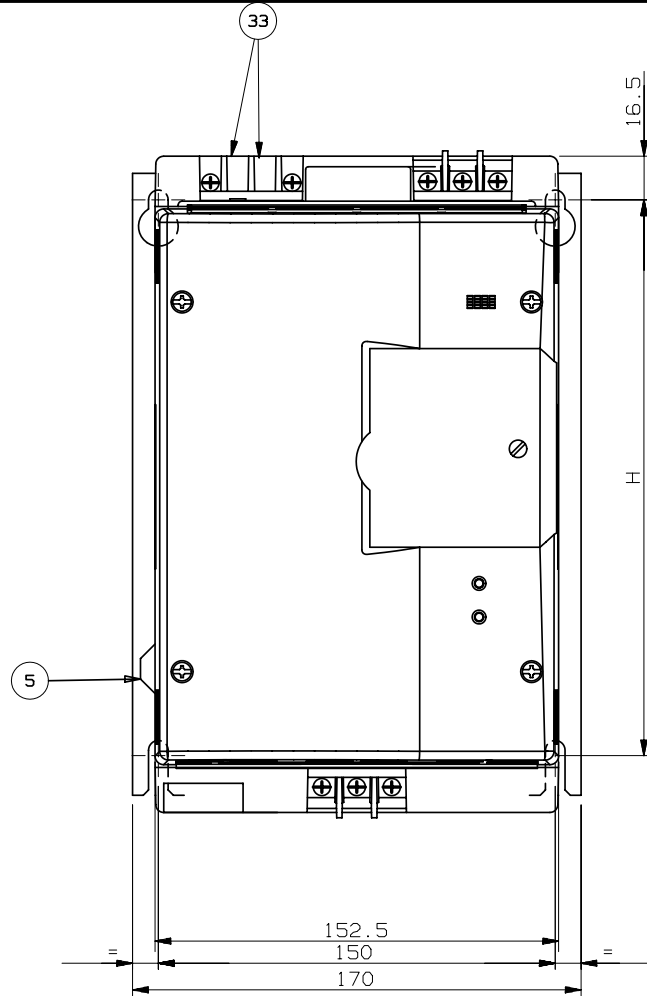
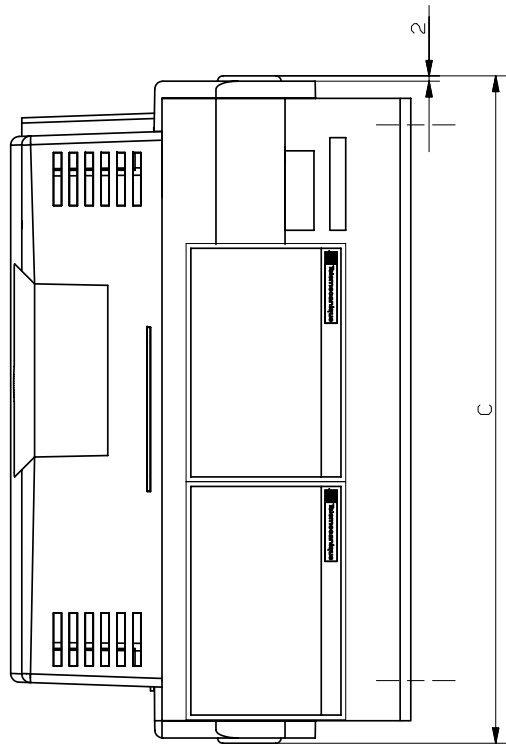
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## ATS46 SPARE PARTS

### ATS46 Products symbols, options, spares

Description	For starters	Reference	Time of delivery
<b>SPARES</b>			
Transformer Size1	D17N to D62N	VY1 G461 401	C
Transformer Size2	D75N to C14N	VY1 G461 402	C
Transformer Size3	C17N to C32N	VY1 G461 403	C
Transformer Size 4 & 5	C41N to M12N	VY1 G461 404	C
Current transformer size 3	C17N to C32N	VY1 G461 301	C
Current transformer sizes 4 & 5	C41N to M12N	VY1 G461 302	C
Inferior and superior casing kit, size 1	D17N to D38N	VY1 G461 101	C
Inferior and superior casing kit D38 to D88N	D47N to D88N	VY1 G461 102	C
Inferior and superior casing kit C11N	C11N	VY1 G461 106	C
Inferior and superior casing kit C14N	C14N	VY1 G461 107	C
Network engineering PC kit	All calibre	VY1 G461 510	B
Transformation kit for T3	C17N to C32N	VY1 G461 103	C
Transformation kit for T4	C41N to C66N	VY1 G461 104	C
Transformation kit for T5	C79N to M12N	VY1 G461 105	C
Control module terminal blocks J1 and J2 (off-pin parts)	All calibre	VZ3 N007	C
Network engineering size1	D17N to D38N	VY1 G461 501	C
Network engineering size2	D47N to C14N	VY1 G461 502	C
Network engineering size3	C17N to C32N	VY1 G461 503	C
Network engineering size4	C41N to C66N	VY1 G461 504	C
Network engineering size5	C79N to M12N	VY1 G461 505	C
Screws, bolts,... size1	D17N to D38N	VY1 G461 601	C
Screws, bolts,... size2	D47N to C14N	VY1 G461 602	C
Screws, bolts,... size3	C17N to C32N	VY1 G461 603	C
Screws, bolts,... size4	C41N to C66N	VY1 G461 604	C
Screws, bolts,... size5	C79N to M12N	VY1 G461 605	C

ASSEMBLY SIZE 1



Usage Variant UV	COMMERCIAL SYMBOLS	H	C
UV 04	ATS46D38N UNEQUIPPED PRODUCT	260	302
UV 03	ATS46D32N UNEQUIPPED PRODUCT	260	302
UV 02	ATS46D22N UNEQUIPPED PRODUCT	210	252
UV 01	ATS46D17N UNEQUIPPED PRODUCT	210	252

SYMBOLE ARTICLE		SYMBOLE ARTICLE	
N° de note	Date emission	Emetteur	IED
J10308	12/04/96	R.PICHEREAU	01
J10327	15/05/96	R.PICHEREAU	02
J10337	12/07/96	R.PICHEREAU	03
J10349	16/09/96	R.PICHEREAU	04
J10365	29/11/96	R.PICHEREAU	05
J30339	11/06/97	D.SENOVILLE	06
.	././.	.	.
.	././.	.	.

Modification		Parametre VJ
LANCEMENT DES NOMENCLATURES		
LANCEMENT DES PLANS		
ajoute nouvelle carte filtre		
Ajoute repere 100 et 101		
TOURNE TRANSFO DE 180°		
Suppression repere 100.		
.	.	.
.	.	.

Etabli	Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
	15/04/96	R.PICHEREAU		
Note appl.	/ /	n° J30339		
			Projet	6JC08
			Dossier	6681
			Format	A3
UNEQUIPPED PRODUCT T.1				RADICAL VU VFI CD IED FOLIO 149403100A53X06 1/3

H G F E D C B A

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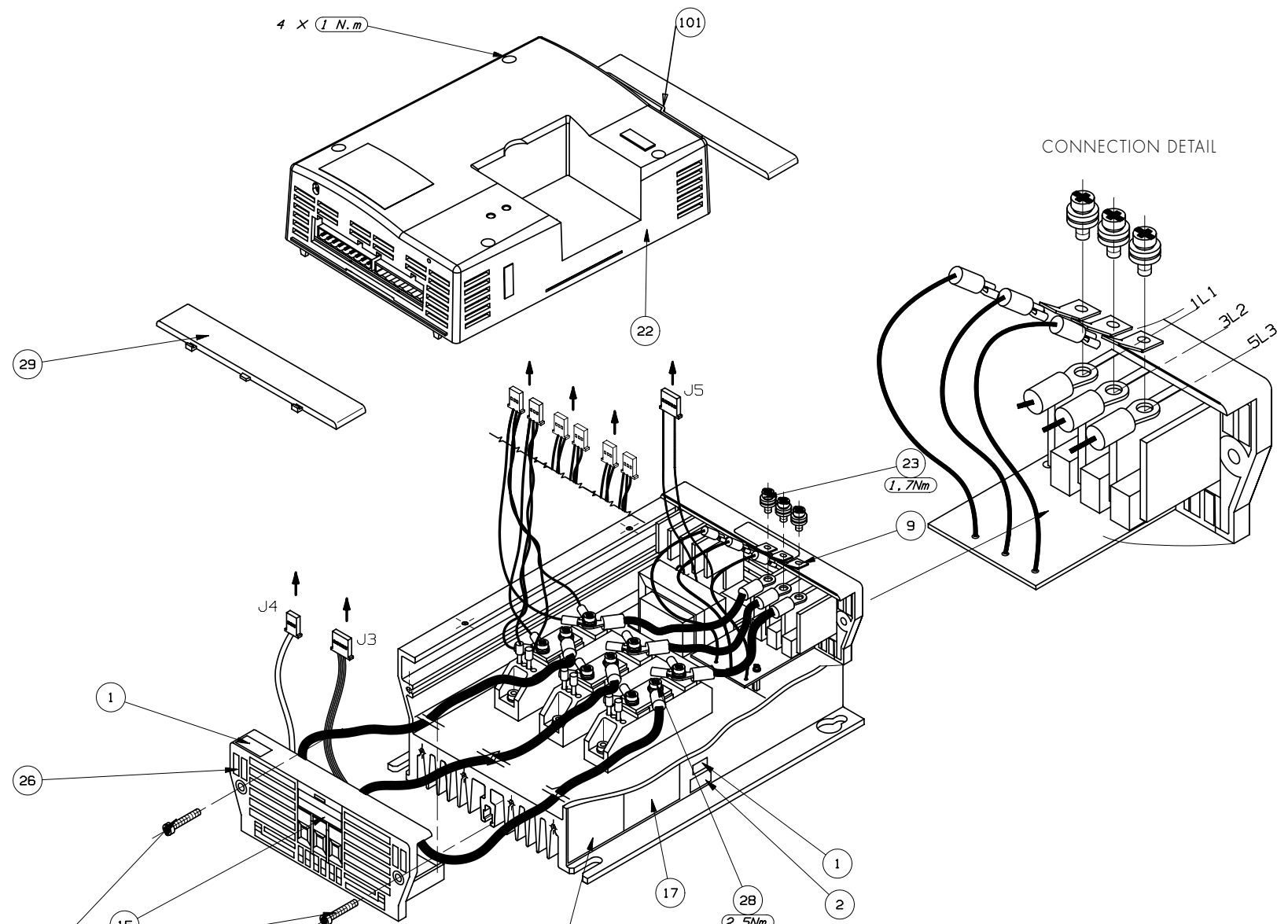
3

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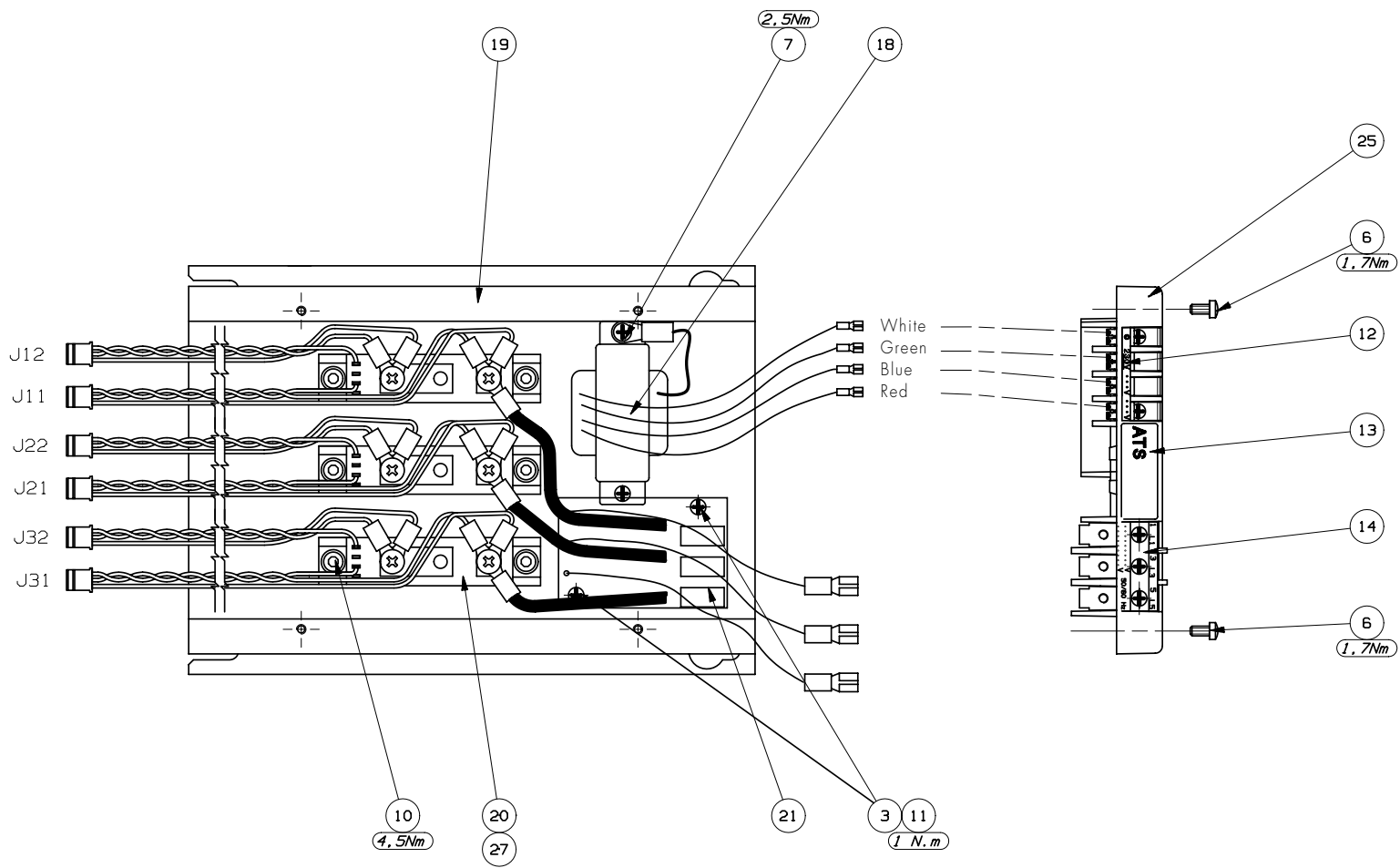
H G F E D C B A

H G F E D C B A



Dates		Noms		Echelle		: DEMARREUR PROGRESSIF	
Etabli	15/04/96	R. PIGEREAU		[Symbol]		:	
Note appl.	11/06/97	n° J30339		UNEQUIPPED PRODUCT T.1			
Projet		6JC08		RADICAL		VU   VFI   CD	
Dossier		6681		149403100A53		X06	
Format		A3		IED		FOLIO	
				2/3			

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Date du Tirage: 09/06/1998

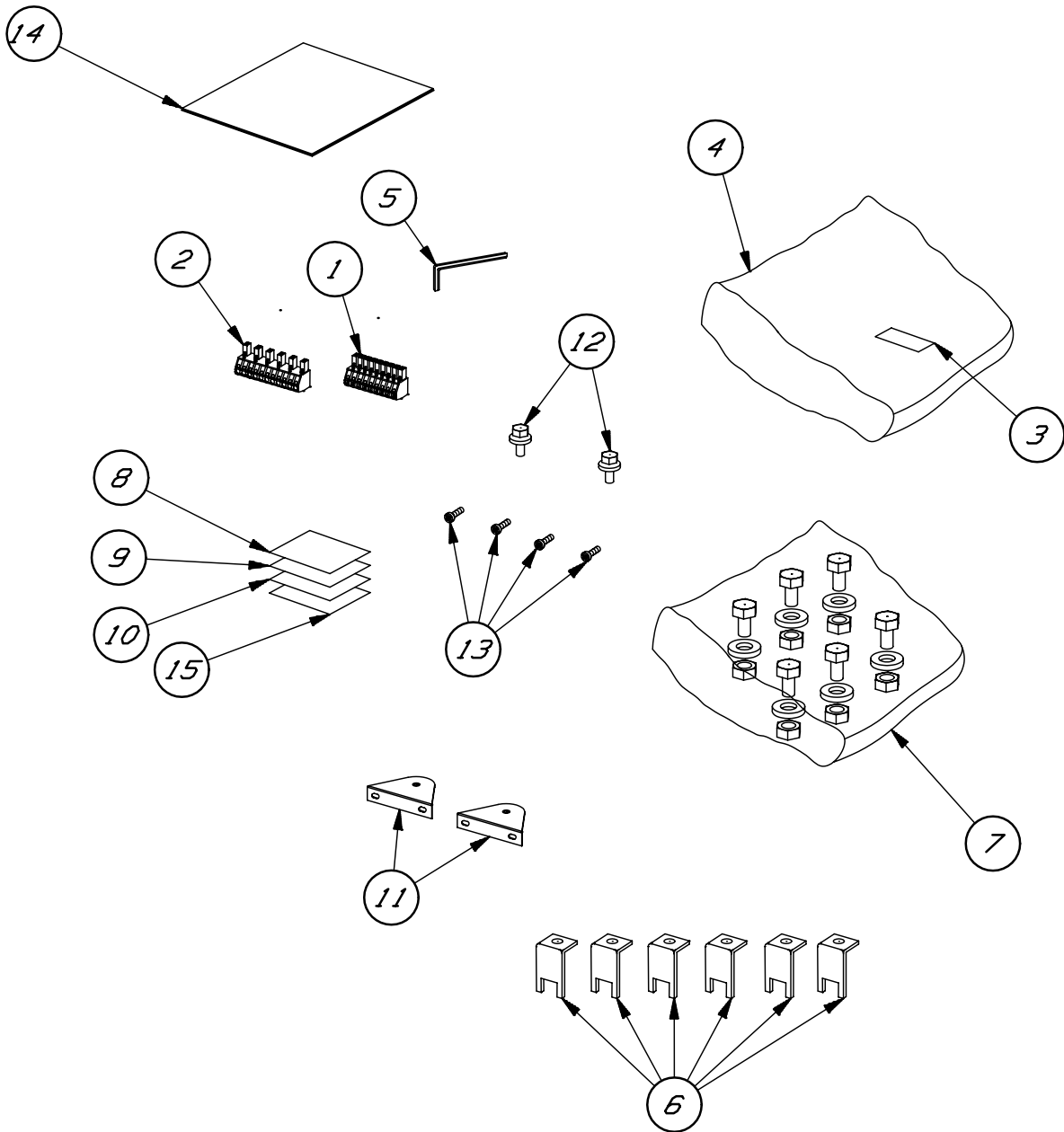


Etabli		Dates	Noms	Echelle	: DEMARREUR PROGRESSIF	
/ /		15/04/96	R. PIGEREAU		:	
Note appl.		11/06/97	n° J30339		UNEQUIPPED PRODUCT T.1	
				Projet	6JC08	RADICAL
				Dossier	6681	VU VFI CD
				Format	A3	IED FOLIO
				149403100A53X06		3/3

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Date du Tirage: 09/06/1998



4



SYMBOLE ARTICLE					
N° de note	Date emission	Emetteur	IED	Modification	Parametre VU
J10308	12/04/96	R.PICHEREAU	01	Lancement des nomenclatures	
J10327	10/06/96	R.PICHEREAU	02	diffusion du plan	
J10356	31/10/96	R.PICHEREAU	03	ajoute guide d'exploitation	
J10368	31/11/96	R.PICHEREAU	04	ajoute etiquette rep 15	
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Dates		Noms		Echelle : 1	
Etabli	04/06/96	R.PICHEREAU		DEMARREUR PROGRESSIF	
	/ /	NA			
Note appl.	31/11/96	n° J10368		KIT PACK WIRING	
Projet 6JC08		RADICAL		VU   VF   CD	IED FOLIO
Dossier 88C2		149410200A53		04	1/1
Format A1					

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Date du Tirage: 08/07/1998

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**1 - RANGE OF IMPLEMENTATION**

These transformers are designed to be used on 50-60 Hz network.  
They follow the specification NF C. 52-200 = Rated power ≤ 16 kVA; rated frequency ≤ 500 Hz; rated voltage ≤ 1100 V.

**2 - INSTALLATION AND ASSEMBLY CONDITIONS**

Ambient temperature.

- Running (if >40°C)  °C  
- Storage (if >40°C)  °C

Installation altitude (if >1 000 m)  m

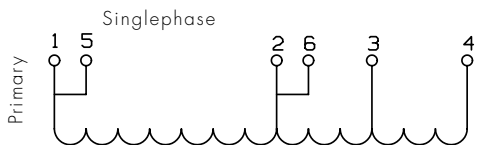
**3 - ELECTRIC CHARACTERISTICS**

Rated power  VA Singlephase transformer   
Rated frequency  Hz Triphase

**3.1 Servicing**

Continuous servicing S1   
Temporary servicing S2  : if yes, running duration  mn  
Periodic intermittent servicing S3  : if yes, cycle  mn run coefficient  %

**3.2 Connection diagram**



**3.3 Primary winding.**

Reference	1 - 2	1 - 3	1 - 4
Rated eff. volt. (V)	225 V ± 17%	390 V ± 17%	475 V ± 17%
Rated eff. intensity (I) at max vacuum	17mA		

**3.4 Secondary winding**

Reference	5 - 6(*)
Rated eff. volt. (V) (1)	225 V ± 5%
Rated eff. intensity (I)	0,1 A

(1) With rated primary voltage and rated secondary intensity.  
(2) With rated primary voltage

Rated eff. volt. (V) (2) at max vacuum  V

(\*) Self-transformer running on connections marked 5 and 6

**3.5 Earth connection test voltage**

This tension is alternatively applied between each wiring and the other ones connected to the transformer earth.  
If the conditions are different, they have to be specified in chapter 7: particular conditions.  
Value kept for the test voltage

**4 - MANUFACTURING CHARACTERISTICS**

4.1 Insulator limit temperature  °C Class   
4.2 Protection degree IP000  IP103   
4.3 Cooling mode (to be specified by the manufacturer)  
Dry transformer  Soaked transformer Coil  Coated transformer   
Circuit   
4.4 Processing  
Execution II according to guide UTE C63-100

**5 - MARKING**

It will be strictly obliged to include:  
- Industrial symbol.  
- Manufacturer name or logo.  
- Code date  
W814940650112xx  
↑  
Item identification

**6 - PACKING**

Expanded polystyrene is not allowed.

**7 - PARTICULAR CONDITIONS**

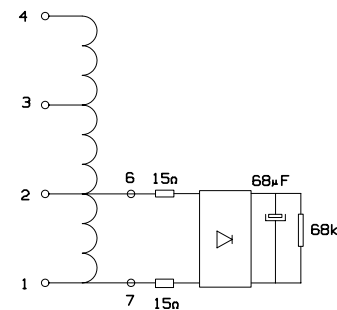
SELF-TRANSFORMER RUNNING.  
Transformer complies with U.L. specifications, concerning all the insulation materials, leakage lines and in-air distances respects.  
Humidity test according to IEC 68-2-23 and 68-2-30

**8 - COILING SPECIFICATION**

Insulation varnish must comply with U.L. specifications.

**9 - QUALIFICATION DYNAMIC TEST**

9.1 Test description.  
Primary: high voltage wiring supply (1-4).  
Secondary: replace real loads in the operation layout by resistances. Their value is calculated to obtain rated current of each coiling for primary rated voltage.  
9.2 Environment.  
Temperature test = 60 °C.  
9.3 Test cycle definition.  
- Network voltage = rated voltage + 17%  
- Energising = 2s.  
- De-energising = 2 s.  
9.4 Test duration.  
240 hours.

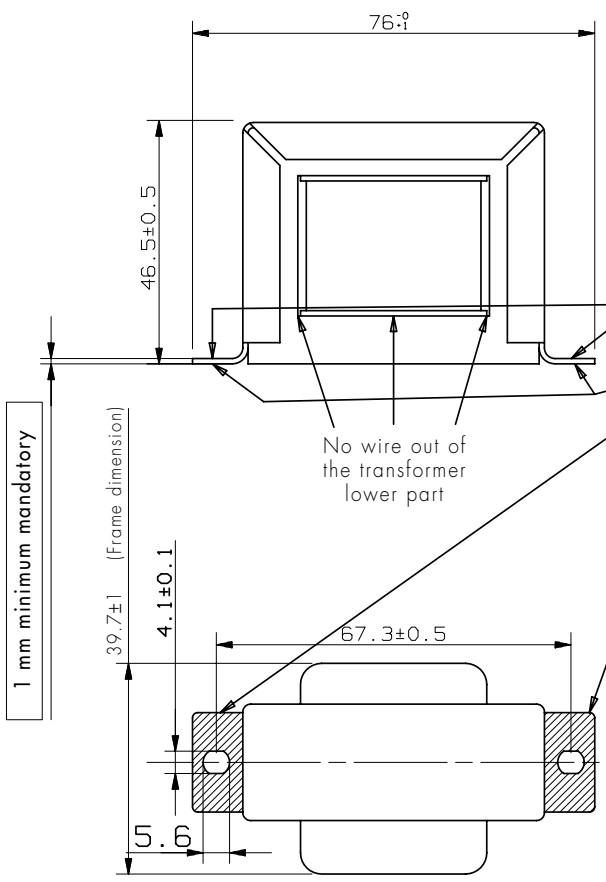


07	31/03/98	J30684	Preserie : revu longueur fils et boîtier tore	D.Senoville
06	03/02/98	Sans	Modifier longueur fils reperes 5,6 et 1,2,3,4 (Proto)	D.Senoville
05	21/03/97	Sans	Ajouter self 2x12mH sur fils de sortie secondaire (proto)	D.Senoville
04	11/10/96	J10353	Modifie suivant reunion angle 45°C, +10mm sur fil 1/2/3/4, schema battement	R.Pichereau
03	25/07/96	J10348	Modifie longueur nappe J5 150mm devient 250mm	
02	30/04/96	J10325	Lancement	
0A	12/01/96	SANS	Lancement/Proto	
Ind. rev.	Date	Note appli.	Modification / modification	Nom

Echelle scale -/- Project project 6JCO8  
Dossier folder 86D1  
DOCUMENT DE DEFINITION  
N° note application application memo n° J30684  
Date date 31/03/98  
Etabli par issued by D.SENOVILLE  
DEMARREUR PROGRESSIF - SOFT STARTER  
TRANSFORMATOR  
ATS46 AUTOTRANSFO.20VA  
RADICAL VU VFI CD IED FOLIO  
149406501 A06 X 07 01/02  
Date du tirage: 09/06/1998 C A D R A 8 Format A3

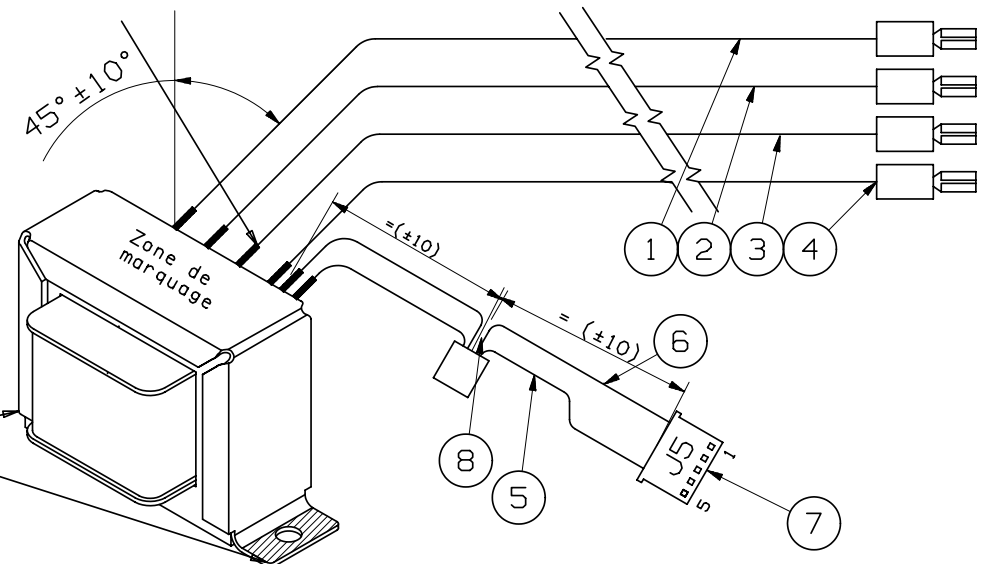
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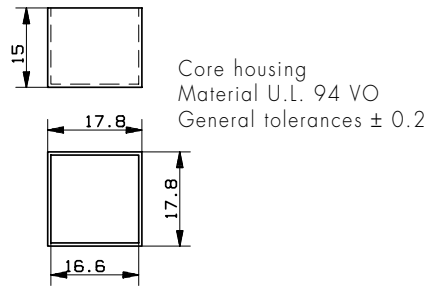


The wires HAVE TO be kept at 45°C with a 20 mm±2 thermo-retractable U.L. certified sleeve.

Do not soak attach brackets in the indicated areas.



Outlet wires HAVE TO be welded on the opposite side of the coiling wire. Wires HAVE TO go out from the same side and towards transformer upper side. Outlet order is not important.



**MECHANICAL SPECIFICATION:**

Attach brackets must resist to sinusoidal vibrations 0.3 G to 0.7 G 2\_200 Hz, during 1 hour, according to IEC 98-2-6 specification.

**CONNECTION ENGINEERING SPECIFICATION:**

Cables definition: slack wire 600V-105°C, AWG 22; U.L. style 1213.  
 Connection engineering instruction: IC 1010367

①	White wire mark 1: M2153019 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 110mm ±10mm
②	Green wire mark 2: M21513017 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 110mm ±10mm
③	Blue wire mark 3: M21513018 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 110mm ±10mm
④	Red wire mark 4: M21513020 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 110mm ±10mm
⑤	2 Black wires marks 5 and 6: M21513022	Length 250mm ±10mm
⑥	2 socket contacts to be stacked : SY3CM0142	
⑦	5-point socket: SY3CM0216 marked J5	
⑧	Common mode coil 2 x 12 mH 200 MA core Ø 9 mm. Operation temperature: ambient maximum 80°C plus core self-heating at specified intensity (200 mA)	

Echelle /- scale	Project 6JC08	N° note application J30684	DEMARREUR PROGRESSIF - SOFT STARTER	
	Dossier folder 86D1		TRANSFORMATOR	
DOCUMENT DE DEFINITION		Date 31/03/98	ATS46 AUTOTRANSFO 20VA	
 GROUPE SCHNEIDER		Etabli par D. SENOVILLE	RADICAL <b>149406501 A06</b>	VU VFI CD IED <b>07</b>
			FOLIO 02/02	
			Date du tirage: 09/06/1998 C A D R A	

PARTS LIST SIZE 1

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940310112            A 10                                    J30688                11/06/98                **ATS46D17N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403101A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W103851350111	EQUIPPED SCREW + - M3-10	2.00000	15/12/96		11.
W403795090311	GREY CLOSED TERMINAL COVER	2.00000	15/12/96		33.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995010111	FATS46 POWER D17/D22	1.00000			
W815995020111	FATS46 FINAL D17/D38	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		2.
W913643040121	TE LABEL 100X67 (ALUMINIUM)	2.00000	01/03/98		16.

FIN

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W815995010111	A 00	W00201	17/02/98	<b>FATS46 POWER 17/D22</b>

DOCUMENT REFERENCE: IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500			27.
SY3MF3013	ENT HEX TARFIL ACZN M3X12	2.00000			3.
REPLACES:	OLD: J924007				
V10RC2082	MEDIUM CS WASHER 8-18, AC ZNC	1.00000			4.
V1110810	SCREW H, M8-10, 6.8 ZNC	1.00000			5.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	2.00000			6.
V12183081	SCREW AF, CBLXS 4.3-10 C, ZNC	2.00000			7.
REPLACES:	OLD: A900305				
W103850860311	EQUIPPED SCREW CHC M5-20	6.00000			10.
W103851350111	EQUIPPED SCREW + - M3-10	2.00000			11.
W314940660112	ATS46 RADIATOR D17/D22	1.00000			19.
W403830660112	ATS.T1. LABEL.1L1.3L2.5L3 *	1.00000			14.
W414940570111	PRODUCT LABEL ATS46D17N	1.00000			13.
W414940620111	LABEL C.230V 400V 460/500V	1.00000			12.
W803857840111	JC08 SIZE 1 C.FILTER PWB	1.00000			21.
W813643385311	ATSD17/D38 EQUIPPED SUPERIOR CASING	1.00000			25.
W814940410111	SUB ASSY MODULE D17	1.00000			20.
W814940650112	SELFTRANSFORMER 20VA 225-390/475V	1.00000	17/02/98		18.
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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995020111            A 00                                    W00201            17/02/98            **FATS46 FINAL D17/38**

DOCUMENT REFERENCE: 1599502

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	3.00000			9.
V12183026	SCREW AF, CBL Z,M4-12 , ZNC	2.00000			6.
W103850860111	EQUIPPED SCREW CHC M5-12	3.00000			28.
W103850870111	EQUIPPED SCREW + - M4-8	3.00000			23.
W403830660312	ATS.T1 LABEL. 2T1.4T2.6T3 *	1.00000			15.
W813643395111	ATS D17 EQUIPPED INFERIOR CASING	1.00000			26.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	17/02/98		22.
W914941150111	MARKING LABEL 34X15 MM	3.00000			1.
1ACE003054	WIRE BUNDLE CLIP 14-16.5	1.00000	17/02/98		30.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	1.00000	17/02/98		31.

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W814940310212            A 10                                    J30688                11/06/98                **ATS46D22N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403102A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W103850860111	EQUIPPED SCREW CHC M5-12	3.00000	15/12/96		28.
W103850870111	EQUIPPED SCREW + - M4-8	3.00000	15/12/96		23.
W403795090311	GREY CLOSED TERMINAL COVER	2.00000	15/12/96		33.
W403830660312	ATS.T1 LABEL. 2T1.4T2.6T3 *	1.00000	15/12/96		15.
W413819410111	COVER NEMA 1	1.00000	15/12/96		101.
W815995010211	FATS46 POWER D17/D22	1.00000			
W815995020211	FATS46 FINAL D17/D38	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		2.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		16.
W914941150111	MARKING LABEL 34X15 MM	1.00000	15/12/96		1.

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W815995010211            A 00                                    W00201                    17/02/98                    **FATS46 POWER 17/D22**

DOCUMENT REFERENCE: 1599501

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500			27.
SY3MF3013	ENT HEX TARFIL ACZN M3X12	2.00000			3.
REPLACES:	OLD: J924007				
V10RC2082	MEDIUM CS WASHER. 8-18, AC ZNC	1.00000			4.
V1110810	SCREW H, M8-10, 6.8 ZNC	1.00000			5.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	2.00000			6.
V12183081	SCREW AF, CBLXS 4.3-10 C, ZNC	2.00000			7.
REPLACES:	OLD: A900305				
W103850860311	EQUIPPED SCREW CHC M5-20	6.00000			10.
W103851350111	EQUIPPED SCREW + - M3-10	2.00000			11.
W314940660112	ATS46 RADIATOR D17/D22	1.00000			19.
W403830660112	ATS.T1. LABEL.1L1.3L2.5L3 *	1.00000			14.
W414940570211	PRODUCT LABEL ATS46D22N	1.00000			13.
W414940620111	LABEL C.230V 400V 460/500V	1.00000			12.
W803857840111	JC08 SIZE 1 C.FILTER PWB	1.00000			21.
W813643385311	ATSD17/D38 EQUIPPED SUPERIOR CASING	1.00000			25.
W814940410211	SUB ASSY MODULE D22	1.00000			20.
W814940650112	SELFTRANSFORMER 20VA 225-390/475V	1.00000	17/02/98		18.

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995020211            A 00                                    W00201            17/02/98            **FATS46 FINAL D17/38**

DOCUMENT REFERENCE: 1599502

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	3.00000			9.
V12183026	SCREW AF, CBL Z,M4-12 , ZNC	2.00000			6.
W103850860111	EQUIPPED SCREW CHC M5-12	3.00000			28.
W103850870111	EQUIPPED SCREW + - M4-8	3.00000			23.
W403830660312	ATS.T1 LABEL. 2T1.4T2.6T3 *	1.00000			15.
W813643395211	ATS D22 EQUIPPED INFERIOR CASING	1.00000			26.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	17/02/98		22.
W914941150111	MARKING LABEL34X15 MM	2.00000			1.
1ACE003054	WIRE BUNDLE CLIP 14-16.5	1.00000	17/02/98		30.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	1.00000	17/02/98		31.

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940310312	A 10	J30688	11/06/98	<b>ATS46D32N PRODUCT ASSEMBLY</b>

DOCUMENT REFERENCE: 149403103A01 IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W403795090311	GREY CLOSED TERMINAL COVER	2.00000	15/12/96		33.
W403813700111	PROTECTION HOUSING	2.00000	15/12/96		29.
W413819410111	COVER NEMA 1	1.00000	15/12/96		101.
W815995010311	FATS46 POWER D32/D38	1.00000			
W815995020311	FATS46 FINAL D17/D38	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		2.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		16.

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W815995010311            A 00                    W00201            17/02/98            **FATS46 POWER 32/D38**

DOCUMENT REFERENCE: 1599501

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500			27.
SY3MF3013	ENT HEX TARFIL ACZN M3X12	2.00000			3.
REPLACES:	OLD: J924007				
V10RC2082	MEDIUM CS WASHER. 8-18, AC ZNC	1.00000			4.
V1110810	SCREW H, M8-10, 6.8 ZNC	1.00000			5.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	4.00000			6.
V12183081	SCREW AF, CBLXS 4.3-10 C, ZNC	4.00000			7.
REPLACES:	OLD: A900305				
W103850860311	EQUIPPED SCREW CHC M5-20	6.00000			10.
W103851350111	EQUIPPED SCREW + - M3-10	2.00000			11.
W314940670112	ATS46 RADIATOR D32/D38	1.00000			19.
W403830660112	ATS.T1. LABEL.1L1.3L2.5L3 *	1.00000			14.
W414940570311	PRODUCT LABEL ATS46D32N	1.00000			13.
W414940620111	LABEL C.230V 400V 460/500V	1.00000			12.
W803857840111	JC08 SIZE 1 C.FILTER PWB	1.00000			21.
W813643385311	ATSD17/D38 EQUIPPED SUPERIOR CASING	1.00000			25.
W814940410311	SUB ASSY MODULE D32	1.00000			20.
W814940650112	SELFTRANSFORMER 20VA 225-390/475V	1.00000	17/02/98		18.

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W815995020311            A 00                                    W00201            17/02/98            **FATS46 FINAL D17/38**

DOCUMENT REFERENCE: 1599502

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	3.00000			9.
V12183026	SCREW AF, CBL Z,M4-12 , ZNC	2.00000			6.
W103850860111	EQUIPPED SCREW CHC M5-12	3.00000			28.
W103850870111	EQUIPPED SCREW + - M4-8	3.00000			23.
W403830660312	ATS.T1 LABEL. 2T1.4T2.6T3 *	1.00000			15.
W813643395311	ATS D32 EQUIPPED INFERIOR CASING	1.00000			26.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	17/02/98		22.
W914941150111	MARKING LABEL34X15 MM	2.00000			1.
1ACE003054	WIRE BUNDLE CLIP 14-16.5	1.00000	17/02/98		30.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	1.00000	17/02/98		31.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940310412            A 10                                    J30688                11/06/98            **ATS46D38N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403104A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		33.
W403813700111	PROTECTION HOUSING	2.00000	15/12/96		29.
W413819410111	COVER NEMA 1	1.00000	15/12/96		101.
W815995010411	FATS46 POWER D32/D38	1.00000			
W815995020411	FATS46 FINAL D17/D38	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		2.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		16.

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SYMBOL                    ITEM                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995010411            A 00                    W00201            17/02/98            **FATS46 POWER 32/D38**

DOCUMENT REFERENCE: 1599501

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500			27.
SY3MF3013	ENT HEX TARFIL ACZN M3X12	2.00000			3.
REPLACES:	OLD: J924007				
V10RC2082	MEDIUM CS WASHER. 8-18, AC ZNC	1.00000			4.
V1110810	SCREW H, M8-10, 6.8 ZNC	1.00000			5.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	2.00000			6.
V12183081	SCREW AF, CBLXS 4.3-10 C, ZNC	2.00000			7.
REPLACES:	OLD: A900305				
W103850860311	EQUIPPED SCREW CHC M5-20	6.00000			10.
W103851350111	EQUIPPED SCREW + - M3-10	2.00000			11.
W314940670112	ATS46 RADIATOR D32/D38	1.00000			19.
W403830660112	ATS.T1. LABEL.1L1.3L2.5L3 *	1.00000			14.
W414940570411	PRODUCT LABEL ATS46D38N	1.00000			13.
W414940620111	LABEL C.230V 400V 460/500V	1.00000			12.
W803857840111	JC08 SIZE 1 C. FILTER PWB	1.00000			21.
W813643385311	ATSD17/D38 EQUIPPED SUPERIOR CASING	1.00000			25.
W814940410411	SUB ASSY MODULE D38	3.00000			20.
W814940650112	SELFTRANSFORMER 20VA 225-390/475V	1.00000	17/02/98		18.
FIN D EXPLOSION					

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W815995020411	A 00	W00201	17/02/98	<b>FATS46 FINAL D17/38</b>

DOCUMENT REFERENCE: 1599502

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	3.00000			9.
V12183026	SCREW AF, CBL Z,M4-12 , ZNC	2.00000			6.
W103850860111	EQUIPPED SCREW CHC M5-12	3.00000			28.
W103850870111	EQUIPPED SCREW + - M4-8	3.00000			23.
W403830660312	ATS.T1 LABEL. 2T1.4T2.6T3 *	1.00000			15.
W813643395411	ATS D38 EQUIPPED INFERIOR CASING	1.00000			26.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	17/02/98		22.
W914941150111	MARKING LABEL34X15 MM	2.00000			1.
1ACE003054	WIRE BUNDLE CLIP 14-16.5	1.00000	17/02/98		30.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	1.00000	17/02/98		31.

FIN D EXPLOSION



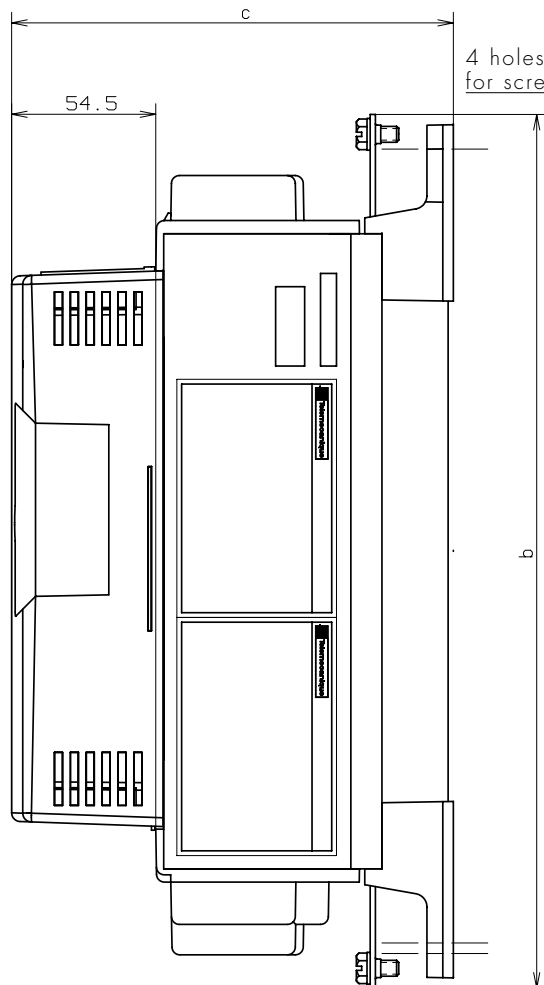
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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814941020111	A 05	J30333	18/04/97	<b>KIT PACK WIRING T1</b>
DOCUMENT REFERENCE: 149410201A01		IED: 06		

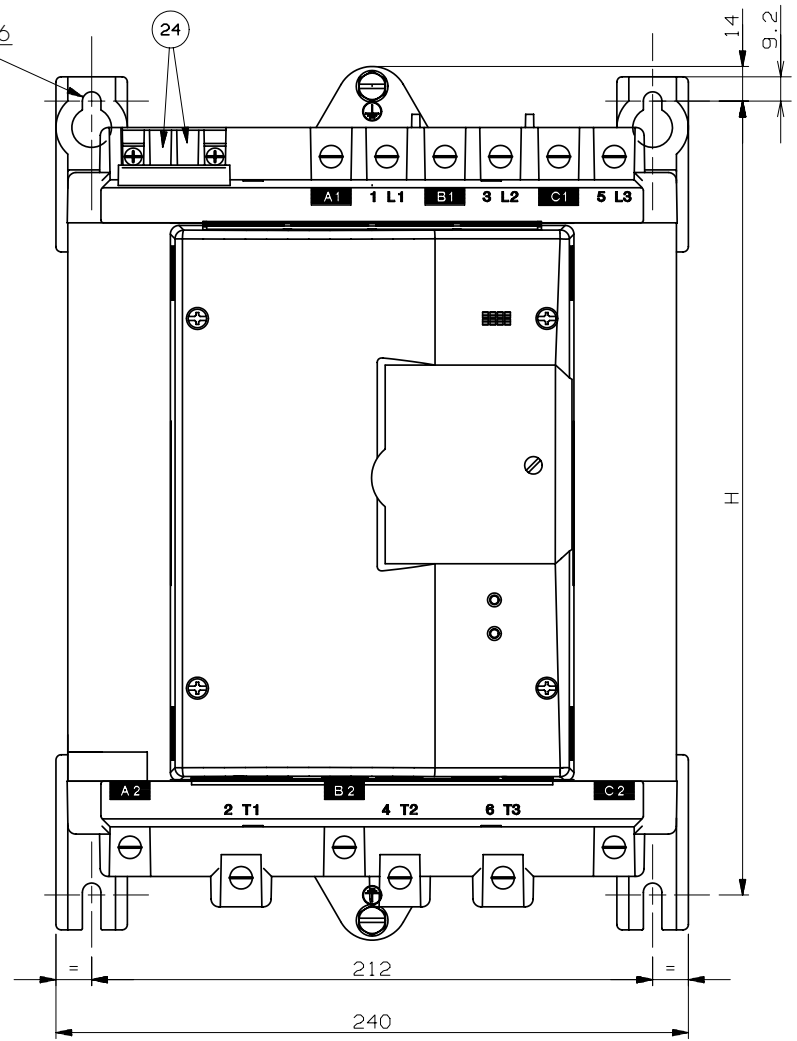
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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M93731035	TRANSPARENT PE SLEEVE E90M L240	0.01500	19/03/96		4.
REPLACES:	OLD: J940702				
VD0C32Q301	GE ATS 46	1.00000	04/11/96		14.
V12183026	SCREW AF, CBL Z,M4-12, ZNC	4.00000	03/05/96		13.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	2.00000	03/05/96		12.
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	03/05/96		11.
W813819520111	TIME RELAY OUTPUT CONNECTOR	1.00000	19/03/96		1.
W813819530111	CONN.CONT TAMPOGRAPHIE	1.00000	19/03/96		2.
W914941150111	MARKING LABEL 34X15 MM	1.00000	18/04/97		3.
FIN D EXPLOSION					

ASSEMBLY SIZE 2



4 holes 7 for screw 6



Variante d'usage	Symboles commerciaux	H	b	c
VU 06	ATS46C15N PRODUIT NU	400	440	244
VU 05	ATS46C11N PRODUIT NU	350	390	244
VU 04	ATS46D88N PRODUIT NU	300	340	244
VU 03	ATS46D75N PRODUIT NU	300	340	244
VU 02	ATS46D62N PRODUIT NU	300	330	167
VU 01	ATS46D47N PRODUIT NU	300	330	167

SYMBOLE ARTICLE				Modification		Parametre VU	
N° de note	Date emission	Emetteur	IED				
J10308	15/04/96	R.PICHEREAU	01	Lancement des nomenclatures			
J10328	15/05/96	R.PICHEREAU	02	Lancement des plans			
J10337	12/07/96	R.PICHEREAU	03	ajoute nouvelle carte filtre			
J10349	16/09/96	R.PICHEREAU	04	Ajoute repere 100 et 101			
J10365	10/01/96	R.PICHEREAU	05	modifie orientation languette de terre et tourne transformateur			
J30339	11/06/97	D.SENOVILLE	06	Supp repere 100, Changement cote connection fils transfo filiot 2 & 4			

Etabli	Dates	Noms	Echelle	<b>DEMARREUR PROGRESSIF</b>	
	15/04/96	R.PICHEREAU	1:1		
Note appl.	11/06/97	n° J30339		UNEQUIPPED, PRODUCT, T2.	
			Projet	6JC08	RADICAL
			Dossier	6682	VU IVFI CD
			Format	A3	IED FOLIO
			149403200A53X06		1/5

FOR UV 01/02/03/04/05

4 x 1 N.m

25

101

35

For UV 03/04/05/06 only

J11 J21 J31 J12 J22 J32 J5

1

J4

26

J3

1, 7Nm

12

2, 5Nm

43

SECTION BB

52

16

16

7

7

100

10

4, 5Nm

4, 5Nm

38

102

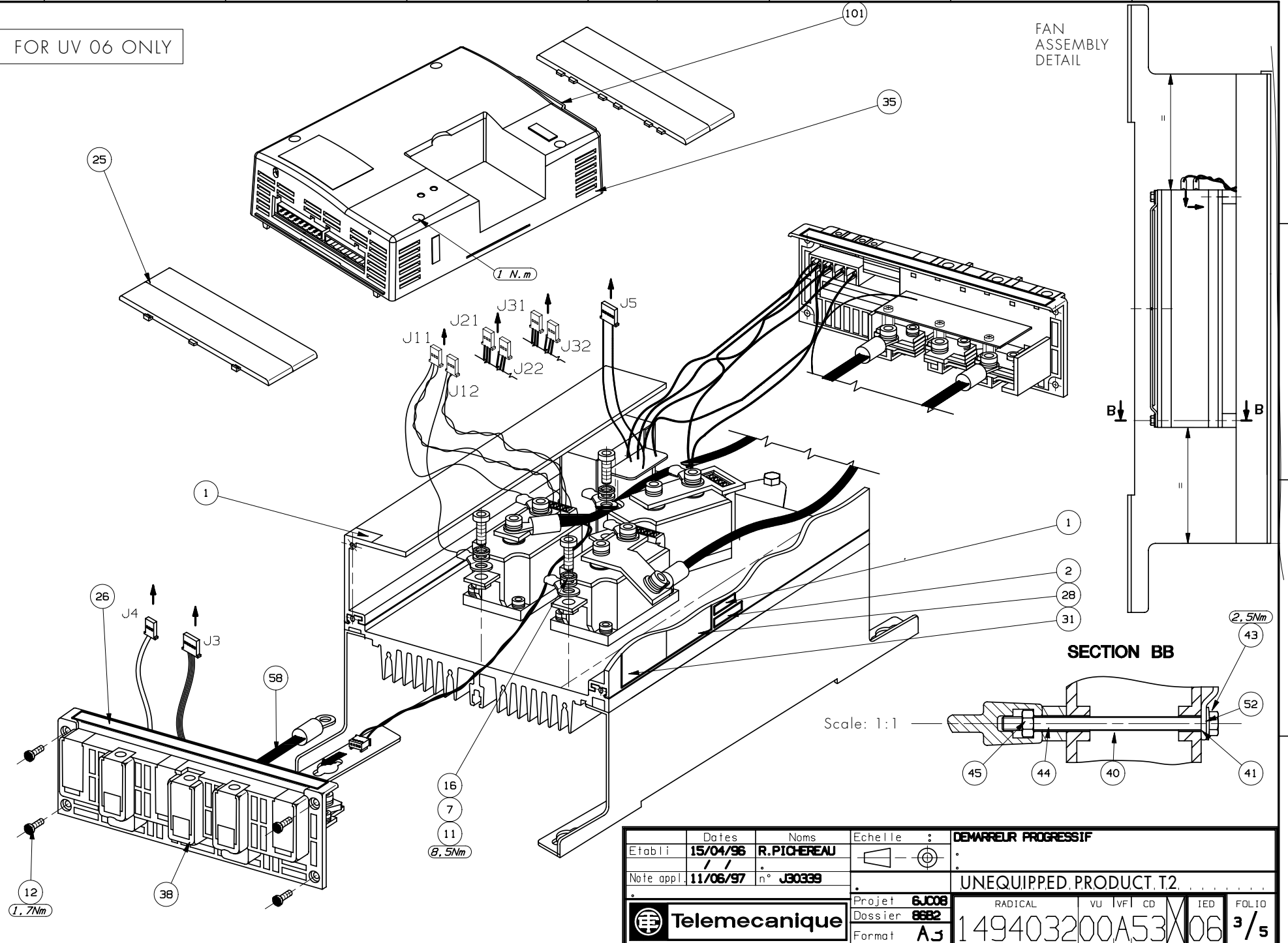
Pour IR seulement  
for IR only

Dates		Noms		Echelle		DEMARREUR PROGRESSIF	
Etabli	15/04/96	R. PIGEREAU		[Symbol]		:	
Note appl	11/06/97	n° J30339		[Symbol]		:	
Projet 6JC08				UNEQUIPPED PRODUCT T.2			
Dossier 6682				RADICAL		VU VFI CD IED FOLIO	
Format A3				149403200A53X06		2/5	

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Date du Tirage: 09/06/1998

FOR UV 06 ONLY

FAN ASSEMBLY  
DETAIL



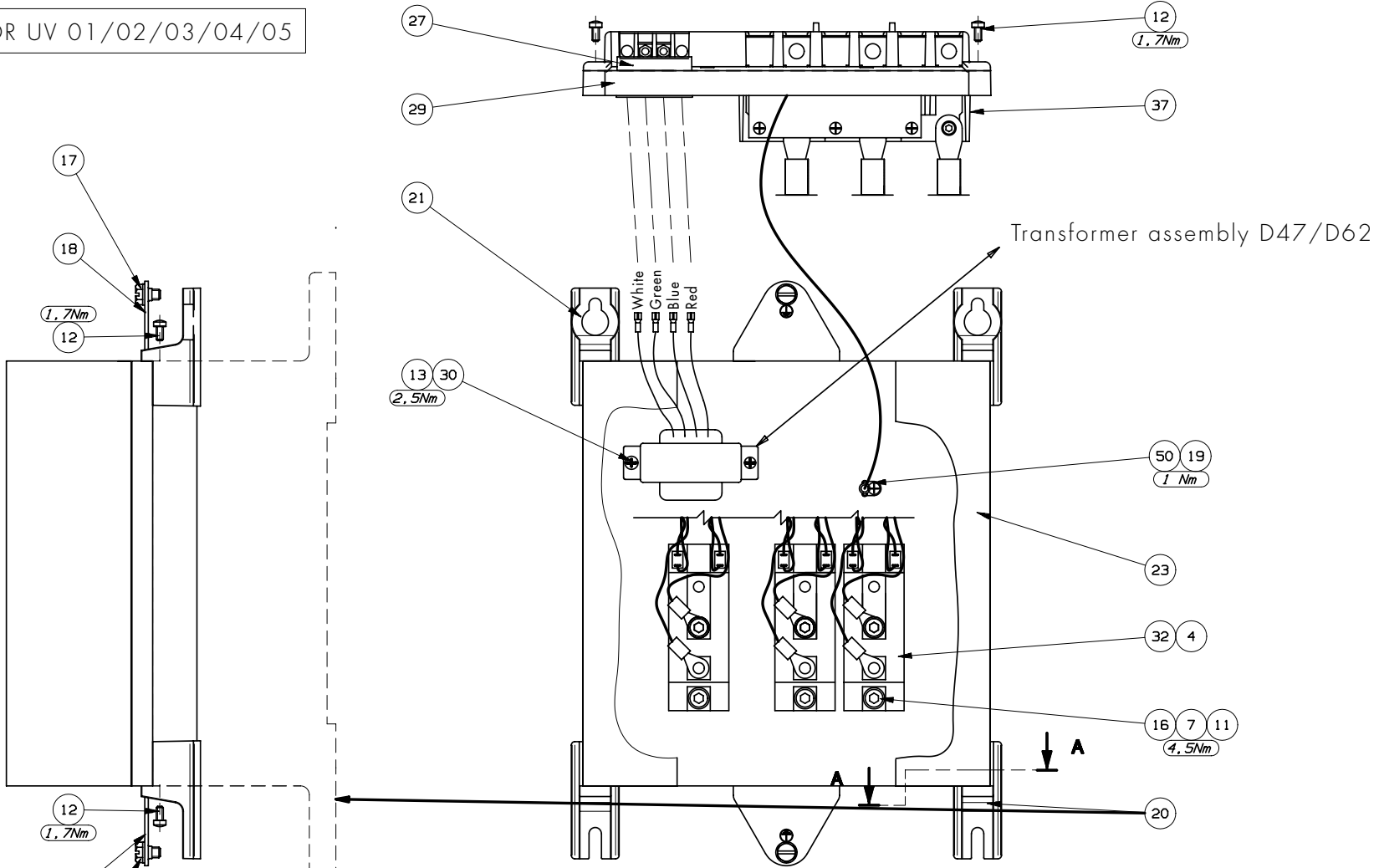
Scale: 1:1

SECTION BB

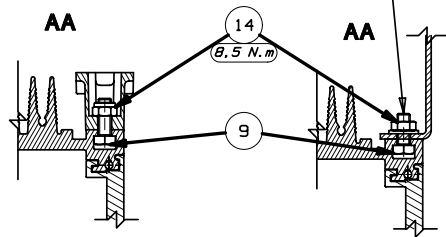
Etabli		Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
/ /		15/04/96	R. PIGEREAU	1:1	
Note appl.		11/06/97	n° J30339	UNEQUIPPED PRODUCT T2	
Projet		6JC08	RADICAL VU VFI CD IED FOLIO		
Dossier		8882	149403200A53X06 3/5		
Format		A3	Date du Tirage: 09/06/1998		

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FOR UV 01/02/03/04/05



For UV 03/04/05/06 only

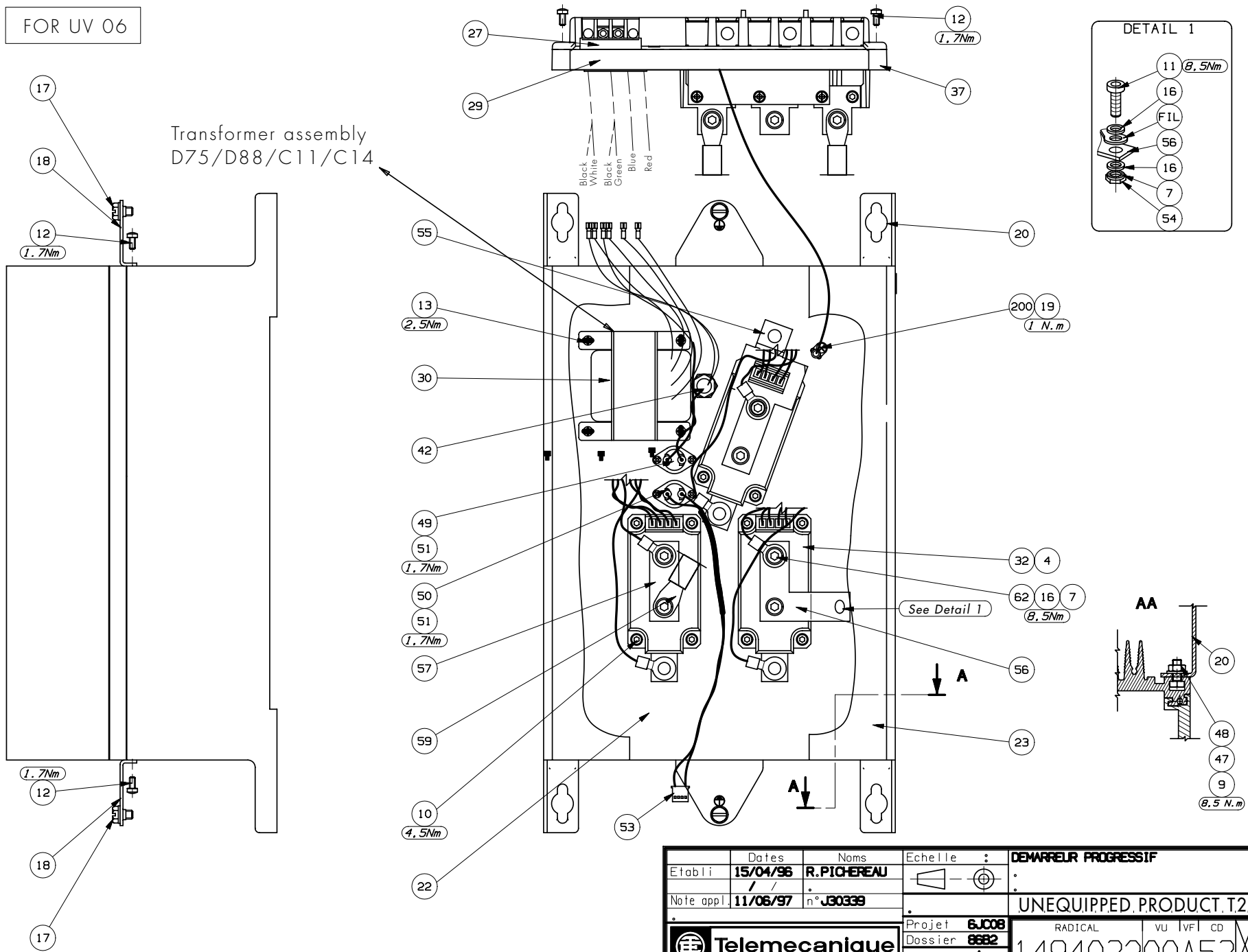
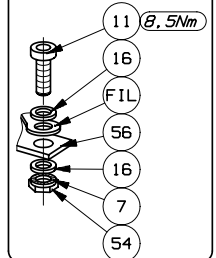


Etabli	Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
	15/04/96	R. PIGEREAU		
Note appl.	11/06/97	n° J30339		UNEQUIPPED PRODUCT T.2
			Projet	6JC08
			Dossier	6682
			Format	A3
		149403200A53X06		RADICAL VU IVFI CD IED FOLIO 4/5

FOR UV 06

Transformer assembly  
D75/D88/C11/C14

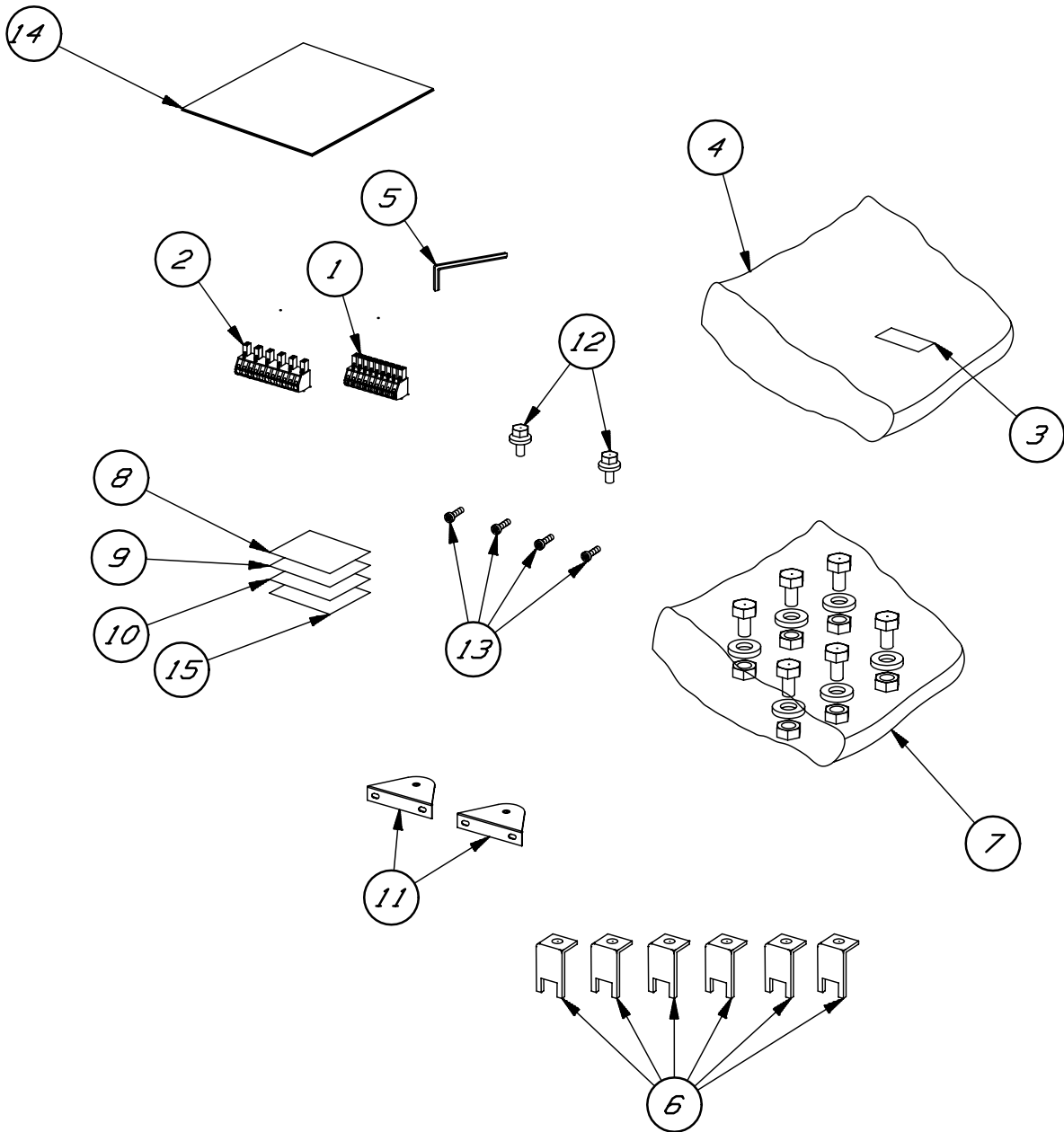
DETAIL 1



Dates		Noms		Echelle		: DEMARREUR PROGRESSIF	
Etabli	15/04/96	R. PIGEREAU		[Symbol]		:	
Note appl.	11/06/97	n° J30339		UNEQUIPPED PRODUCT T.2			
Projet		6JC08		RADICAL		VU VFI CD	
Dossier		6682		149403200A53X06		IED FOLIO	
Format		A3				5/5	

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Date du Tirage: 09/06/1998

4



SYMBOLE ARTICLE					
N° de note	Date emission	Emetteur	IED	Modification	Parametre VU
J10308	12/04/96	R.PICHEREAU	01	Lancement des nomenclatures	
J10327	10/06/96	R.PICHEREAU	02	diffusion du plan	
J10356	31/10/96	R.PICHEREAU	03	ajoute guide d'exploitation	
J10368	31/11/96	R.PICHEREAU	04	ajoute etiquette rep 15	
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Dates		Noms		Echelle : 1	
Etabli	04/06/96	R.PICHEREAU		DEMARREUR PROGRESSIF	
	/ /	NA			
Note appl.	31/11/96	n° J10368		KIT PACK WIRING	
Projet		6JC08		RADICAL	
Dossier		88C2		VU   VF   CD	
Format		A1		IED FOLIO	
Telemecanique		149410200A53		04 1/1	

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Date du Tirage: 08/07/1998

D

I

C

B

I

A



**1 - RANGE OF IMPLEMENTATION**

These transformers are designed to be used on 50-60 Hz network.  
They follow the specification NF C 52-200 = Rated power ≤ 16 kVA; rated frequency ≤ 500 Hz; rated voltage ≤ 1100 V.

**2 - INSTALLATION AND ASSEMBLY CONDITIONS**

Ambient temperature.

- Running (if >40°C)  °C  
- Storage (if >40°C)  °C

Installation altitude (if >1 000 m)  m

**3 - ELECTRIC CHARACTERISTICS**

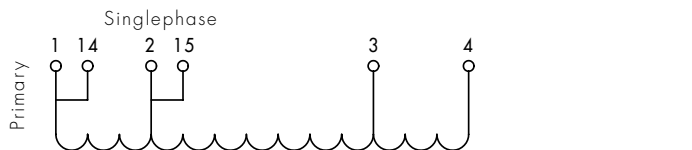
Rated power  VA  
Rated frequency

Singlephase transformer   
Triphase

**3.1 Servicing**

Continuous servicing S1   
Temporary servicing S2  : if yes, running duration  mn  
Periodic intermittent servicing S3  : if yes, cycle  mn run coefficient  %

**3.2 Connection diagram**



**3.3 Primary winding.**

Reference	1 - 2	1 - 3	1 - 4
Rated eff. volt. (V)	225 V ± 17%	390 V ± 17%	475 V ± 17%
Rated eff. intensity (I) at max vacuum	22mA		

**3.4 Secondary winding**

Reference	14-15 (*)	(1) With rated primary voltage and rated secondary intensity.
Rated eff. volt. (V) (1)	225 V ± 5%	
Rated eff. intensity (I)	0.3 A	(2) With rated primary voltage
Rated eff. volt. (V) (2) at max vacuum	250	V

(\*) Self-transformer running on connections marked 1, 2, 14 and 15

**3.5 Earth connection test voltage**

This tension is alternatively applied between each wiring and the other ones connected to the transformer earth.  
If the conditions are different, they have to be specified in chapter 7: particular conditions.  
Value kept for the test voltage

**4 - MANUFACTURING CHARACTERISTICS**

4.1 Insulator limit temperature  °C Class   
4.2 Protection degree IP000  IP103   
4.3 Cooling mode (to be specified by the manufacturer)  
Dry transformer  Soaked transformer  Coiled transformer   
Circuit  Coated transformer   
4.4 Processing  
Execution II according to guide UTE C63-100

**5 - MARKING**

It will be strictly obliged to include:  
- Industrial symbol.  
- Manufacturer name or logo.  
- Code date  
W814940580112xx  
↑  
Item identification

**6 - PACKING**

Expanded polystyrene is not allowed.

**7 - PARTICULAR CONDITIONS**

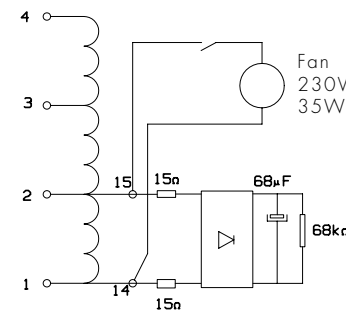
SELF-TRANSFORMER RUNNING.  
Transformer complies with U.L. specifications, concerning all the insulation materials, leakage lines and in-air distances respects.  
Humidity test according to IEC 68-2-23 and 68-2-30

**8 - COILING SPECIFICATION**

Insulation varnish must comply with U.L. specifications.

**9 - QUALIFICATION DYNAMIC TEST**

9.1 Test description.  
Primary: high voltage wiring supply (1-4).  
Secondary: replace real loads in the operation layout by resistances. Their value is calculated to obtain rated current of each coiling for primary rated voltage.  
9.2 Environment.  
Temperature test = 60 °C.  
9.3 Test cycle definition.  
. Network voltage = rated voltage + 17%  
. Energising = 2s.  
. De-energising = 2 s.  
9.4 Test duration.  
240 hours.



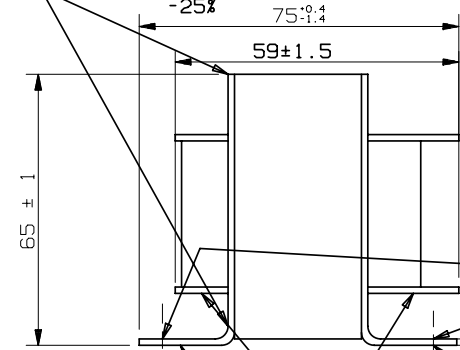
Ind. rev.	Date	Note appli. memo	Modification / modification	N°m
09	31/03/98	J30684	Mise a jour plan pour lancement preserie .	D.Senoville
08	03/02/98	Sans	Modifier longueur fils reperes 14 ,15 et 1 a 4 avec suppression 45°	D.Senoville
07	21/03/97	Sans	Ajouter self 2x12mH sur fils de sortie secondaire	D.Senoville
06	14/01/97	J10365	sortie de fils passe a 45°	
05	11/10/96	J10353	mise a jour suivant reunion avec le fournisseur	
04	21/06/96	J10340	modifie Ieff a vide et precise epaisseur pattes de fixations	
03	11/06/96	J10336	MODIFIE LONGUEUR NAPPE J5 150mm DEVIENT 250mm	
02	30/04/96	J10325	Lancement	

Echelle scale	-/-	Project project	6JCO8	N° note application application memo n°	J30684	DEMARREUR PROGRESSIF - SOFT STARTER
Dossier folder	86D2					Taille 2 - size 2 TRANSFORMATOR
DOCUMENT DE DEFINITION			Date date	31/03/98	ATS46, AUTOTRA, 60VA, 50/60Hz	
 GROUPE SCHNEIDER			Etabli par issued by	D. SENOVILLE	RADICAL VU   VFI   CD   IED   FOLIO <b>149405801 A06 X 09</b> 01/02	

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Recommended torque load for screw M4:

1,8 N.m  $\begin{matrix} +0 \\ -25\% \end{matrix}$

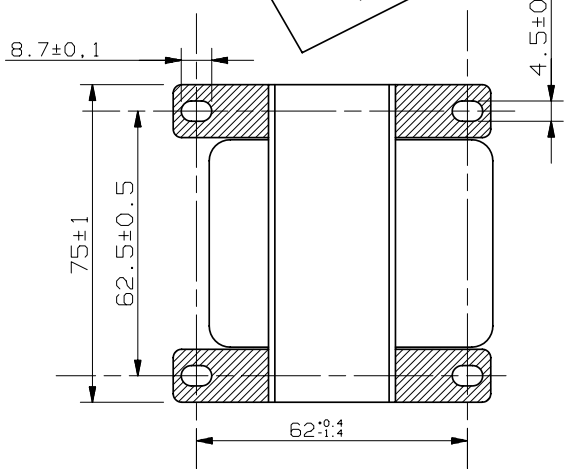


The wires **HAVE TO** be kept with a 15 mm±2 thermo-retractable U.L. certified sleeve.

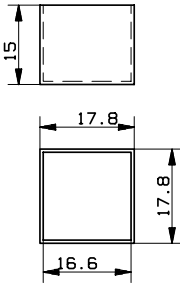
Do not soak attach brackets in the indicated areas.

No wire out of the transformer lower part

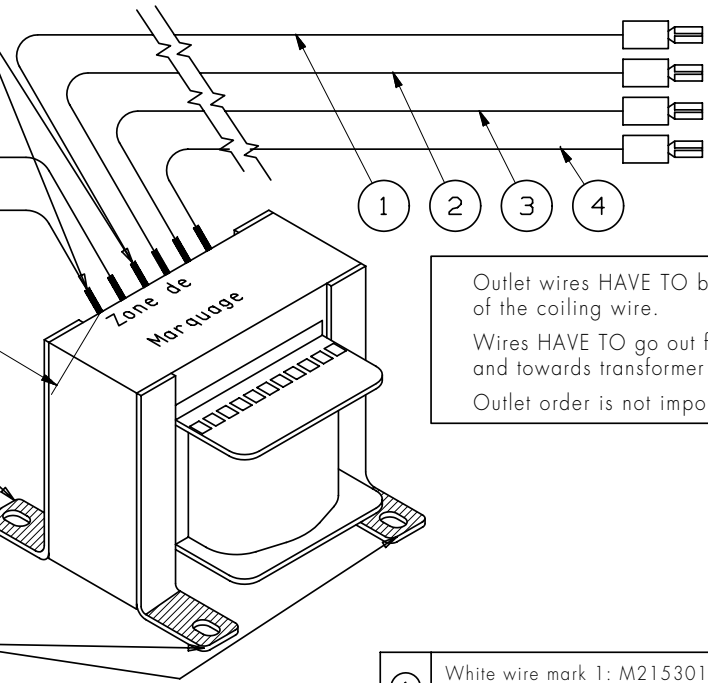
8.7±0.1



2 mm minimum mandatory



Core housing  
Material U.L. 94 VO  
General tolerances ± 0.2



Outlet wires **HAVE TO** be welded on the opposite side of the coiling wire.  
Wires **HAVE TO** go out from the same side and towards transformer upper side.  
Outlet order is not important.

①	White wire mark 1: M2153019 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 170mm ±10mm
②	Green wire mark 2: M21513017 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 170mm ±10mm
③	Blue wire mark 3: M21513018 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 170mm ±10mm
④	Red wire mark 4: M21513020 Yellow pre-insulated clips 2.8 x 0.8 : SY3KC018	Length 170mm ±10mm
⑭	2 Black wires marks 14 and 15: M21513022	Length 250mm ±10mm
⑮	2 socket contacts to be stacked : SY3CM0142	
⑯	5-point socket: SY3CM0216 marked J5	
⑰	Common mode coil 2 x 12 mH 200 mA core Ø 9 mm. Operation temperature: ambient maximum 80°C plus core self-heating at specified intensity (200 mA)	

**MECHANICAL SPECIFICATION:**

Attach brackets must resist to sinusoidal vibrations 0.3 G to 0.7 G 2\_200 Hz, during 1 hour, according to IEC 98-2-6 specification.

**CONNECTION ENGINEERING SPECIFICATION:**

Cables definition: slack wire 600V-105°C, AWG 22; U.L. style 1213.  
Connection engineering instruction: IC 1010367

Echelle scale: -/-	Project: 6JC08	N° note application: J30684	Project application memo n°: DEMARREUR PROGRESSIF - SOFT STARTER
Dossier folder: 86D2			Taille 2 - size 2
DOCUMENT DE DEFINITION		Date date: 31/03/98	.A.T.S.4.6. .A.U.T.O.T.R.A. .6.0.V.A. .5.0./6.0.H.z
Telemecanique GROUPE SCHNEIDER		Etabli par issued by: D.SENOVILLE	RADICAL VU IVFI CD IED FOLIO <b>149405801 A06 X 09</b> 02/02

PARTS LIST SIZE 2

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940320112            A 10                                    J30688                01/07/98            **ATS46D47N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403201A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DD3735002	BAR CODE LABEL 34.93X6.1MM	1.00000	15/12/96		2.
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		24.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995050111	FATS46 POWER D47	1.00000			
W815995060111	FATS46 FINAL D47	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		36.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		31.

FIN D EXPLOSION

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W815995050111	A 00	6W *	10/03/98	<b>FATS46 POWER 47</b>

DOCUMENT REFERENCE: 1599505

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.03000	10/03/98		4.
SY3CE8001	TAB 6.3X0,8 90 TO SCREW D4	1.00000	10/03/98		200.
REPLACES :	OLD: A875204				
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	10/03/98		7.
V1109909	SCREW H, M6-16, 8.8 ZNC	4.00000	10/03/98		9.
V1180620	SCREW C HC, M6-20, 8.8 ZNC	6.00000	10/03/98		11.
V12183026	SCREW AF, CBL Z,M4-12, ZNC	4.00000	10/03/98		12.
V12183081	SCREW AF CBLXS 4.3-10 C, ZNC	2.00000	10/03/98		13.
REPLACES:	OLD: A900305				
V1610600	WASHER Z, 6, AC ZNC	6.00000	10/03/98		16.
W10274587	G SHAKEPROOF WASHER SCREW AF1VA612	2.00000	10/03/98		17.
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	10/03/98		18.
W103851350111	EQUIPPED SCREW + - M3-10	1.00000	10/03/98		19.
W303593110111	ATV45 FLANGED INFERIOR STAND*	2.00000	10/03/98		20.
W303593820111	ATV45 FLANGED SUPERIOR STAND*	2.00000	10/03/98		21.
W314940680111	MACHINED RADIATOR D47/D62	1.00000	10/03/98		22.
W814940490111	ATS46 SUB ASSY MODULES D47/D88	1.00000	10/03/98		32.
W814940650112	SELFTRANSFORMER 20VA 225-390/475V	1.00000	10/03/98		30.
21285206	LOCK NUT M6	4.00000	10/03/98		14.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995060111            A 00                                    W00202            10/03/98            **FATS46 FINAL D47**

DOCUMENT REFERENCE: 1599506

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	10/03/98		7.
V1180616	SCREW C HC, M6-16, 8.8 ZNC	6.00000	10/03/98		100.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	8.00000	10/03/98		12.
V12221025	PLAIN WASHER 7 X 11 X 2 AC	3.00000	10/03/98		102.
V1610600	WASHER Z, 6, AC ZNC	6.00000	10/03/98		16.
W314940720111	MACHINED SIDE D47/62/75/88	2.00000	10/03/98		23.
W414940620111	C LABEL 230V 400V 460/500V	1.00000	10/03/98		27.
W414940630111	ATS46 MOTOR LABEL T2 GREY	1.00000	10/03/98		26.
W414940640111	PRODUCT LABEL ATS46D47N	1.00000	10/03/98		29.
W813643405311	ATSD47/D88 EQUIPPED SUPERIOR CASING	1.00000	10/03/98		37.
W813643415111	ATS D47 EQUIPPED INFERIOR CASING	1.00000	10/03/98		38.
W813819490114	SUB ASSY CONTROL BLOCK FINISHED	1.00000	10/03/98		35.
W914941150111	MARKING LABEL 34X15 MM	2.00000	10/03/98		1.
1ACE003054	BUNDLE WIRE CLIP 14-16.5	1.00000	10/03/98		103.
1ACE003055	BUNDLE WIRE CLIP 5.1-7.6	1.00000	10/03/98		104.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940320212            A 10                                    J30688                01/07/98            **ATS46D62N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403202A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DD3735002	BAR CODE LABEL 34.93X6.1MM	1.00000	15/12/96		2.
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		24.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995050211	FATS46 POWER D62	1.00000			
W815995060211	FATS46 FINAL D62	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		36.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		31.

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W815995050211            A 00                                    W00202                    12/03/98                    **FATS46 POWER 62**

DOCUMENT REFERENCE: 1599505

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.03000	12/03/98		4.
SY3CE8001	TAB 6.3X0,8 90 TO SCREW D4	1.00000	12/03/98		200.
REPLACES :	OLD: A875204				
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	12/03/98		7.
V1109909	SCREW H, M6-16, 8.8 ZNC	4.00000	12/03/98		9.
V1180620	SCREW C HC, M6-20, 8.8 ZNC	6.00000	12/03/98		11.
V12183026	SCREW AF, CBL Z,M4-12, ZNC	4.00000	12/03/98		12.
V12183081	SCREW AF, CBLXS 4.3-10 C, ZNC	2.00000	12/03/98		13.
REPLACES :	OLD: A900305				
V1610600	WASHER Z, 6, AC ZNC	6.00000	12/03/98		16.
W10274587	G SHAKEPROOF WASHER SCREW AF1VA612	2.00000	12/03/98		17.
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	12/03/98		18.
W103851350111	EQUIPPED SCREW + - M3-10	1.00000	12/03/98		19.
W303593110111	ATV45 FLANGED INFERIOR STAND*	2.00000	12/03/98		20.
W303593820111	ATV45 FLANGED SUPERIOR STAND*	2.00000	12/03/98		21.
W314940680111	MACHINED RADIATOR D47/D62	1.00000	12/03/98		22.
W814940490111	ATS46 SUB ASSY MODULES D47/D88	1.00000	12/03/98		
W814940650112	SELFTRANSFORMER 20VA 225-390/475V	1.00000	12/03/98		30.
21285206	LOCK NUT M6	4.00000	12/03/98		14.

FIN D EXPLOSION



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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995060211            A 00                                    W00202            12/03/98            **FATS46 FINAL D62**

DOCUMENT REFERENCE: 1599506

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	12/03/98		7.
V1180616	SCREW C HC, M6-16, 8.8 ZNC	6.00000	12/03/98		100.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	8.00000	12/03/98		12.
V12221025	PLAIN WASHER 7 X 11 X 2 AC	3.00000	12/03/98		102.
V1610600	WASHER Z, 6, AC ZNC	6.00000	12/03/98		16.
W314940720111	MACHINED SIDE D47/62/75/88	2.00000	12/03/98		23.
W414940620111	C LABEL 230V 400V 460/500V	1.00000	12/03/98		27.
W414940630111	ATS46 MOTOR LABEL T2 GREY	1.00000	12/03/98		26.
W414940640211	PRODUCT LABEL ATS46D62N	1.00000	12/03/98		29.
W813643405311	ATSD47/D88 EQUIPPED SUPERIOR CASING	1.00000	12/03/98		37.
W813643415211	ATS D62 EQUIPPED INFERIOR CASING	1.00000	12/03/98		38.
W813819490114	SUB ASSY CONTROL BLOCK FINISHED	1.00000	12/03/98		35.
W914941150111	MARKING LABEL 34X15 MM	2.00000	12/03/98		1.
1ACE003054	BUNDLE WIRE CLIP 14-16.5	1.00000	12/03/98		103.
1ACE003055	BUNDLE WIRE CLIP 5.1-7.6	1.00000	12/03/98		104.

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940320312            A 10                                    J30688                01/07/98            **ATS46D75N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403203A01                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DD3735002	BAR CODE LABEL 34.93X6.1MM	1.00000	15/12/96		2.
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		24.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995030111	FATS46 POWER D75	1.00000			
W815995040111	FATS46 FINAL D75	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		36.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		31.

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W815995030111            A 00                                    W00202                    17/03/98                    **FATS46 POWER 75**

DOCUMENT REFERENCE: 1599503

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.03000	17/03/98		4.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	17/03/98		49.
SY3AT0007	BIMETAL THERMOSTAT90CCONT.OR UL	1.00000	17/03/98		50.
REPLACES :	OLD: A884201				
SY3AV0050	FAN PROTECTION GRID TH=162	1.00000	17/03/98		41.
REPLACES :	OLD: J920601				
SY3CE8001	TAB 6.3X0,8 90 TO SCREW D4	1.00000	17/03/98		200.
REPLACES :	OLD: A875204				
SZ1XH07	FAN IMPELLER 150X172X38 220V UL	1.00000	17/03/98		40.
V10RC1042	CS LOCK WASHER 4-8, AC ZNC	2.00000	17/03/98		52.
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	12.00000	17/03/98		7-47.
V1110615	SCREW H, M6-15, 6.8 ZNC	6.00000	17/03/98		9.
V1180620	SCREW C HC, M6-20, 8.8 ZNC	6.00000	17/03/98		11.
V12130017	SCREW H, M4-60, 6.8 ZNC	2.00000	17/03/98		43.
REPLACES :	OLD: J921302				
V12183026	SCREW AF, CBL Z, M4-12, ZNC	4.00000	17/03/98		12.
V12183081	SCREW AF, CBLXS 4.3-10 C, ZNC	4.00000	17/03/98		13.
REPLACES :	OLD: A900305				
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	17/03/98		51.
REPLACES :	OLD: A901302				
V1320400	NUT H, M4, 6 ZNC	2.00000	17/03/98		45.
V1320600	NUT H, M6, 6 ZNC	6.00000	17/03/98		48.
V1610600	WASHER Z, 6, AC ZNC	6.00000	17/03/98		16.
W10274587	G SHAKEPROOF WASHER SCREW AF1VA612	2.00000	17/03/98		17.

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995030111            A 00                                    W00202            17/03/98            **FATS46 POWER 75**

DOCUMENT REFERENCE: 1599503

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	17/03/98		18.
W103834260112	ATS D72 MOUNTING FOOT	2.00000	17/03/98		20.
W103851350111	EQUIPPED SCREW + - M3-10	1.00000	17/03/98		19.
W113642280111	ATV/ATS FAN BRACING	2.00000	17/03/98		44.
W314940690111	ATS46 DISSIPATOR D75/D88	1.00000	17/03/98		22.
W803834010111	SUB ASSY VIGITH. CABLE BUNDLE	1.00000	17/03/98		53.
W813641830112	ATS23 SUB ASSY FAN FILTER /F50°	1.00000	17/03/98		42.
W814940490111	ATS46 SUB ASSY MODULES D47/D88	1.00000	17/03/98		32.
W814940580112	SELFTRANSFORMER 60VA 225-390/475V	1.00000	17/03/98		30.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995040111            A 00                                    W00202            17/03/98            **FATS46 FINAL D75**

DOCUMENT REFERENCE: 1599504

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	17/03/98		7.
V1180616	SCREW C HC, M6-16, 8.8 ZNC	6.00000	17/03/98		100.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	8.00000	17/03/98		12.
V12221025	PLAIN WASHER 7 X 11 X 2 AC	3.00000	17/03/98		102.
V1610600	WASHER Z, 6, AC ZNC	6.00000	17/03/98		16.
W314940720111	MACHINED SIDE D47/62/75/88	2.00000	17/03/98		23.
W414940620111	C LABEL 230V 400V 460/500V	1.00000	17/03/98		27.
W414940630111	ATS46 MOTOR LABEL T2 GREY	1.00000	17/03/98		26.
W414940640311	PRODUCT LABEL ATS46D75N	1.00000	17/03/98		29.
W813643405311	ATSD47/D88 EQUIPPED SUPERIOR CASING	1.00000	17/03/98		37.
W813643415311	ATS D75 EQUIPPED INFERIOR CASING	1.00000	17/03/98		38.
W813819490114	SUB ASSY CONTROL BLOCK FINISHED	1.00000	17/03/98		35.
W914941150111	MARKING LABEL 34X15 MM	2.00000	17/03/98		1.
1ACE003054	BUNDLE WIRE CLIP 14-16.5	1.00000	17/03/98		103.
1ACE003055	BUNDLE WIRE CLIP 5.1-7.6	1.00000	17/03/98		104.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940320412            A 10                                    J30688                01/07/98            **ATS46D88N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403204A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DD3735002	BAR CODE LABEL 34.93X6.1MM	1.00000	15/12/96		2.
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		24.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995030211	FATS46 POWER D88	1.00000			
W815995040211	FATS46 FINAL D88	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		36.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		31.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W815995030211            A 00                                    W00202                    17/03/98                    **FATS46 POWER 88**

DOCUMENT REFERENCE: 1599503

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.03000	17/03/98		4.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	17/03/98		49.
SY3AT0007	BIMETAL THERMOSTAT 90CONT.OR UL	1.00000	17/03/98		50.
REPLACES :	OLD: A884201				
SY3AV0050	FAN PROTECTION GRID TH=162	1.00000	17/03/98		41.
REPLACES :	OLD: J920601				
SY3CE8001	TAB 6.3X0,8 90 TO SCREW D4	1.00000	17/03/98		200.
REPLACES :	OLD: A875204				
SZ1XH07	FAN IMPELLER 150X172X38 220V UL	1.00000	17/03/98		40.
V10RC1042	CS LOCK WASHER 4-8, AC ZNC	2.00000	17/03/98		52.
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	12.00000	17/03/98		7-47.
V1110615	SCREW H, M6-15, 6.8 ZNC	6.00000	17/03/98		9.
V1180620	SCREW C HC, M6-20, 8.8 ZNC	6.00000	17/03/98		11.
V12130017	SCREW H, M4-60, 6.8 ZNC	2.00000	17/03/98		43.
REPLACES :	OLD: J921302				
V12183026	SCREW AF, CBL Z, M4-12, ZNC	4.00000	17/03/98		12.
V12183081	SCREW AF CBLXS 4.3-10 C, ZNC	4.00000	17/03/98		13.
REPLACES :	OLD: A900305				
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	17/03/98		51.
REPLACES :	OLD: A901302				
V1320400	NUT H, M4, 6 ZNC	2.00000	17/03/98		45.
V1320600	NUT H, M6, 6 ZNC	6.00000	17/03/98		48.
V1610600	WASHER Z, 6, AC ZNC	6.00000	17/03/98		16.
W10274587	G SHAKEPROOF WASHER SCREW.AF1VA612	2.00000	17/03/98		17.

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W815995030211	A 00	W00202	17/03/98	<b>FATS46 POWER 88</b>

DOCUMENT REFERENCE: 1599503

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	17/03/98		18.
W103834260112	ATS D72 MOUNTING FOOT	2.00000	17/03/98		20.
W103851350111	EQUIPPED SCREW + - M3-10	1.00000	17/03/98		19.
W113642280111	ATV/ATS FAN BRACING	2.00000	17/03/98		44.
W314940690111	ATS46 DISSIPATOR D75/D88	1.00000	17/03/98		22.
W803834010111	SUB ASSY VIGITH. CABLE BUNDLE	1.00000	17/03/98		53.
W813641830112	ATS23 SUB ASSY FAN FILTER /F50°	1.00000	17/03/98		42.
W814940490111	ATS46 SUB ASSY MODULES D47/D88	1.00000	17/03/98		32.
W814940580112	SELFTRANSFORMER 60VA 225-390/475V	1.00000	17/03/98		30.

FIN D EXPLOSION



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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995040211            A 00                                    W00202            17/03/98            **FATS46 FINAL D88**

DOCUMENT REFERENCE: 1599504

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	17/03/98		7.
V1180616	SCREW C HC, M6-16, 8.8 ZNC	6.00000	17/03/98		10.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	8.00000	17/03/98		12.
V12221025	PLAIN WASHER 7 X 11 X 2 AC	3.00000	17/03/98		102.
V1610600	WASHER Z, 6, AC ZNC	6.00000	17/03/98		16.
W314940720111	MACHINED SIDE D47/62/75/88	2.00000	17/03/98		23.
W414940620111	C LABEL 230V 400V 460/500V	1.00000	17/03/98		27.
W414940630111	ATS46 MOTOR LABEL T2 GREY	1.00000	17/03/98		26.
W414940640411	PRODUCT LABEL ATS46D88N	1.00000	17/03/98		29.
W813643405311	ATSD47/D88 EQUIPPED SUPERIOR CASING	1.00000	17/03/98		37.
W813643415411	ATS D88 EQUIPPED INFERIOR CASING	1.00000	17/03/98		38.
W813819490114	SUB ASSY CONTROL BLOCK FINISHED	1.00000	17/03/98		35.
W914941150111	MARKING LABEL 34X15 MM	2.00000	17/03/98		1.
1ACE003054	BUNDLE WIRE CLIP 14-16.5	1.00000	17/03/98		103.
1ACE003055	BUNDLE WIRE CLIP 5.1-7.6	1.00000	17/03/98		104.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940320512            A 10                                    J30688                01/07/98            **ATS46C11N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403205A01                                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DD3735002	BAR CODE LABEL 34.93X6.1MM	1.00000	15/12/96		2.
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		24.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995030311	FATS46 POWER C11	1.00000			
W815995040311	FATS46 FINAL C11	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		36.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		31.

FIN D EXPLOSION

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995030311            A 00                                    W00202            17/03/98            **FATS46 POWER 11**

DOCUMENT REFERENCE: 1599503

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.03000	17/03/98		4.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	17/03/98		49.
SY3AT0007	BIMETAL THERMOSTAT90CCONT.OR UL	1.00000	17/03/98		50.
REPLACES :	OLD: A884201				
SY3AV0050	FAN PROTECTION GRID TH=162	1.00000	17/03/98		41.
REPLACES :	OLD: J920601				
SY3CE8001	TAB 6.3X0,8 90 TO SCREW D4	1.00000	17/03/98		200.
REPLACES :	OLD: A875204				
SZ1XH07	FAN IMPELLER150X172X38 220V UL	1.00000	17/03/98		40.
V10RC1042	CS LOCK WASHER 4-8, AC ZNC	2.00000	17/03/98		52.
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	12.00000	17/03/98		7-47.
V1110615	SCREW H, M6-15, 6.8 ZNC	6.00000	17/03/98		9.
V1180620	SCREW C HC, M6-20, 8.8 ZNC	6.00000	17/03/98		11.
V12130017	SCREW H, M4-60, 6.8 ZNC	2.00000	17/03/98		43.
REPLACES :	OLD: J921302				
V12183026	SCREW AF, CBL Z, M4-12, ZNC	4.00000	17/03/98		12.
V12183081	SCREW AF CBLXS 4.3-10 C, ZNC	4.00000	17/03/98		13.
REPLACES :	OLD: A900305				
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	17/03/98		51.
REPLACES :	OLD: A901302				
V1320400	NUT H, M4, 6 ZNC	2.00000	17/03/98		45.
V1320600	NUT H, M6, 6 ZNC	6.00000	17/03/98		48.
V1610600	WASHER Z, 6, AC ZNC	6.00000	17/03/98		16.
W10274587	G SHAKEPROOF WASHER SCREW.AF1VA612	2.00000	17/03/98		17.

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W815995030311	A 00	W00202	17/03/98	<b>FATS46 POWER 11</b>

DOCUMENT REFERENCE: 1599503

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	17/03/98		18.
W103834260212	ATS C10 MOUNTING FOOT	2.00000	17/03/98		20.
W103851350111	EQUIPPED SCREW + - M3-10	1.00000	17/03/98		19.
W113642280111	ATV/ATS FAN BRACING	2.00000	17/03/98		44.
W314940700111	RADIATOR C11 USINE	1.00000	17/03/98		22.
W803834010111	SUB ASSY VIGITH. CABLE BUNDLE	1.00000	17/03/98		53.
W813641830112	ATS23 SUB ASSY FAN FILTER /F50°	1.00000	17/03/98		42.
W814940490211	ATS46 SUB ASSY MODULES C11	1.00000	17/03/98		32.
W814940580112	SELFTRANSFORMER 60VA 225-390/475V	1.00000	17/03/98		30.

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995040311            A 00                                    W00202            17/03/98            **FATS46 FINAL C11**

DOCUMENT REFERENCE: 1599504

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	17/03/98		7.
V1180616	SCREW C HC, M6-16, 8.8 ZNC	6.00000	17/03/98		100.
V12183026	SCREW AF, CBL Z, M4-12, ZNC	8.00000	17/03/98		12.
V12221025	PLAIN WASHER 7 X 11 X 2 AC	3.00000	17/03/98		102.
V1610600	WASHER Z, 6, AC ZNC	6.00000	17/03/98		16.
W314940720211	MACHINED SIDE C11	2.00000	17/03/98		23.
W403813700111	PROTECTION HOUSING	2.00000	17/03/98		25.
W414940620111	C LABEL 230V 400V 460/500V	1.00000	17/03/98		27.
W414940630111	ATS46 MOTOR LABEL T2 GREY	1.00000	17/03/98		26.
W414940640511	PRODUCT LABEL ATS46C11N	1.00000	17/03/98		29.
W813643405411	ATSC11 CAPOT SUP.EQUIPE	1.00000	17/03/98		37.
W813643415511	ATS C11 EQUIPPED INFERIOR CASING	1.00000	17/03/98		38.
W813819490114	SUB ASSY CONTROL BLOCK FINISHED	1.00000	17/03/98		35.
W914941150111	MARKING LABEL 34X15 MM	2.00000	17/03/98		1.
1ACE003054	BUNDLE WIRE CLIP 14-16.5	1.00000	17/03/98		103.
1ACE003055	BUNDLE WIRE CLIP 5.1-7.6	1.00000	17/03/98		104.

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W814940320612            A 10                                    J30688                01/07/98            **ATS46C14N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403206A01                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DD3735002	BAR CODE LABEL 34.93X6.1MM	1.00000	15/12/96		2.
W403795090311	GREY CLOSED TERMINAL COVER.	2.00000	15/12/96		24.
W413819410111	NEMA 1 COVER	1.00000	15/12/96		101.
W815995050311	FATS46 POWER C14N	1.00000			
W815995060311	FATS46 FINAL C14N	1.00000			
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96		36.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98		31.

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SYMBOL                    ITEM                                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995050311            A 00                                    W00202            13/03/98            **FATS46 POWER 14N**

DOCUMENT REFERENCE: 1599505

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.03000	13/03/98		4.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	13/03/98		49.
SY3AT0007	BIMETAL THERMOSTAT90CCONT.OR UL	1.00000	13/03/98		50.
REPLACES :	OLD: A884201				
SY3AV0050	FAN PROTECTION GRID TH=162	1.00000	13/03/98		41.
REPLACES :	OLD: J920601				
SY3CE8001	TAB 6.3X0,8 90 TO SCREW D4	1.00000	13/03/98		200.
REPLACES :	OLD: A875204				
SZ1MH0057	MODULE 2THY 250A 1400V	3.00000	13/03/98		32.
REPLACES :	OLD: J931202				
SZ1MH0063	0001 MODULE 2THY 250A 1400V	3.00000	13/03/98		32.
REPLACES :	OLD: J934003				
SZ1XH07	FAN IMPELLER150X172X38 220V UL	1.00000	13/03/98		40.
V10RC1042	CS LOCK WASHER 4-8, AC ZNC	2.00000	13/03/98		52.
V10RC1062	CS LOCK WASHER 6-12, AC ZNC	6.00000	13/03/98		47.
V10RC2082	WASHER CS MOY. 8-18, AC ZNC	5.00000	13/03/98		7.
V1110615	SCREW H, M6-15, 6.8 ZNC	6.00000	13/03/98		9.
V1180816	SCREW C HC, M8-16, 8.8 ZNC	4.00000	13/03/98		62.
V1180820	SCREW C HC, M8-20, 8.8 ZNC	1.00000	13/03/98		11.
V12130017	SCREW H, M4-60, 6.8 ZNC	2.00000	13/03/98		43.
REPLACES :	OLD: J921302				
V12183026	SCREW AF, CBL Z,M4-12, ZNC	4.00000	13/03/98		12.
V12183081	SCREW AF CBLXS 4.3-10 C,ZNC	4.00000	13/03/98		13.
REPLACES :	OLD: A900305				

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SYMBOL                    ITEM                    NOTE NBR            IMPL DATE            COMPONENT DESIGNATION  
W815995050311            A 00                    W00202               13/03/98               **FATS46 POWER 14N**

DOCUMENT REFERENCE: 1599505

IED:

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	13/03/98		51.
REPLACES :	OLD: A901302				
V1320400	NUT H, M4, 6 ZNC	2.00000	13/03/98		45.
V1320600	NUT H, M6, 6 ZNC	6.00000	13/03/98		48.
V1630810	WASHER M, 8, AC ZNC	5.00000	13/03/98		16.
W10274587	G SHAKEPROOF WASHER SCREW.AF1VA612	2.00000	13/03/98		17.
W103593610111	ATV45 FLANGED GROUNDING LUG	2.00000	13/03/98		18.
W103834260312	ATS C15 MOUNTING FOOT	2.00000	13/03/98		20.
W103850860311	EQUIPPED SCREW CHC M5-20	12.00000	13/03/98		10.
W103851350111	EQUIPPED SCREW + - M3-10	1.00000	13/03/98		19.
W113642280111	ATV/ATS FAN BRACING	2.00000	13/03/98		44.
W203861460111	SHUNT POUR SEMIPACK 3	1.00000	13/03/98		57.
W213643350111	ATSC15 BARRE ENTREE CU	1.00000	13/03/98		55.
W314940710111	RADIATOR USINE C14	1.00000	13/03/98		22.
W803834010211	SUB ASSY VIGITH. CABLE BUNDLE	1.00000	13/03/98		53.
W803862080111	POWER CONNECTION WIRE	1.00000	13/03/98		58.
W803862080211	POWER CONNECTION WIR	1.00000	13/03/98		59.
W813641830112	ATS23 SUB ASSY FAN FILTER /F50°	1.00000	13/03/98		42.
W814940580112	SELFTRANSFORMER 60VA 225-390/475V	1.00000	13/03/98		30.
W814940870311	MODULES CABLE BUNDLE C14	1.00000	13/03/98		60.

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W815995060311	A 00	W00202	13/03/98	<b>FATS46 FINAL C14N</b>

DOCUMENT REFERENCE: 1599506

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
V10RC2082	WASHER CS MOY. 8-18, AC ZNC	7.00000	13/03/98		7.
V1180816	SCREW C HC, M8-16, 8.8 ZNC	2.00000	13/03/98		62.
V1180820	SCREW C HC, M8-20, 8.8 ZNC	5.00000	13/03/98		11.
V12183026	SCREW AF, CBL Z,M4-12, ZNC	8.00000	13/03/98		12.
V1630810	WASHER M, 8, AC ZNC	7.00000	13/03/98		16.
W314940720311	MACHINED LATERAL SIDE	2.00000	13/03/98		23.
W403813700111	PROTECTION CASING	4.00000	13/03/98		25.
W414940620111	C LABEL 230V 400V 460/500V	1.00000	13/03/98		27.
W414940630111	ATS46 MOTOR LABEL T2 GREY	1.00000	13/03/98		26.
W414940640611	PRODUCT LABEL ATS46C14N	1.00000	13/03/98		29.
W813643425211	ATSC14 EQUIPPED SUPERIOR CASING	1.00000	13/03/98		37.
W813643435211	ATSC14 EQUIPPED INFERIOR CASING	1.00000	13/03/98		38.
W813819490114	SUB ASSY CONTROL BLOCK FINISHED	1.00000	13/03/98		35.
W914941150111	MARKING LABEL 34X15 MM	2.00000	13/03/98		1.
1ACE003054	BUNDLE WIRE CLIP 14-16.5	1.00000	13/03/98		103.
1ACE003055	BUNDLE WIRE CLIP 5.1-7.6	1.00000	13/03/98		104.
FIN D EXPLOSION					

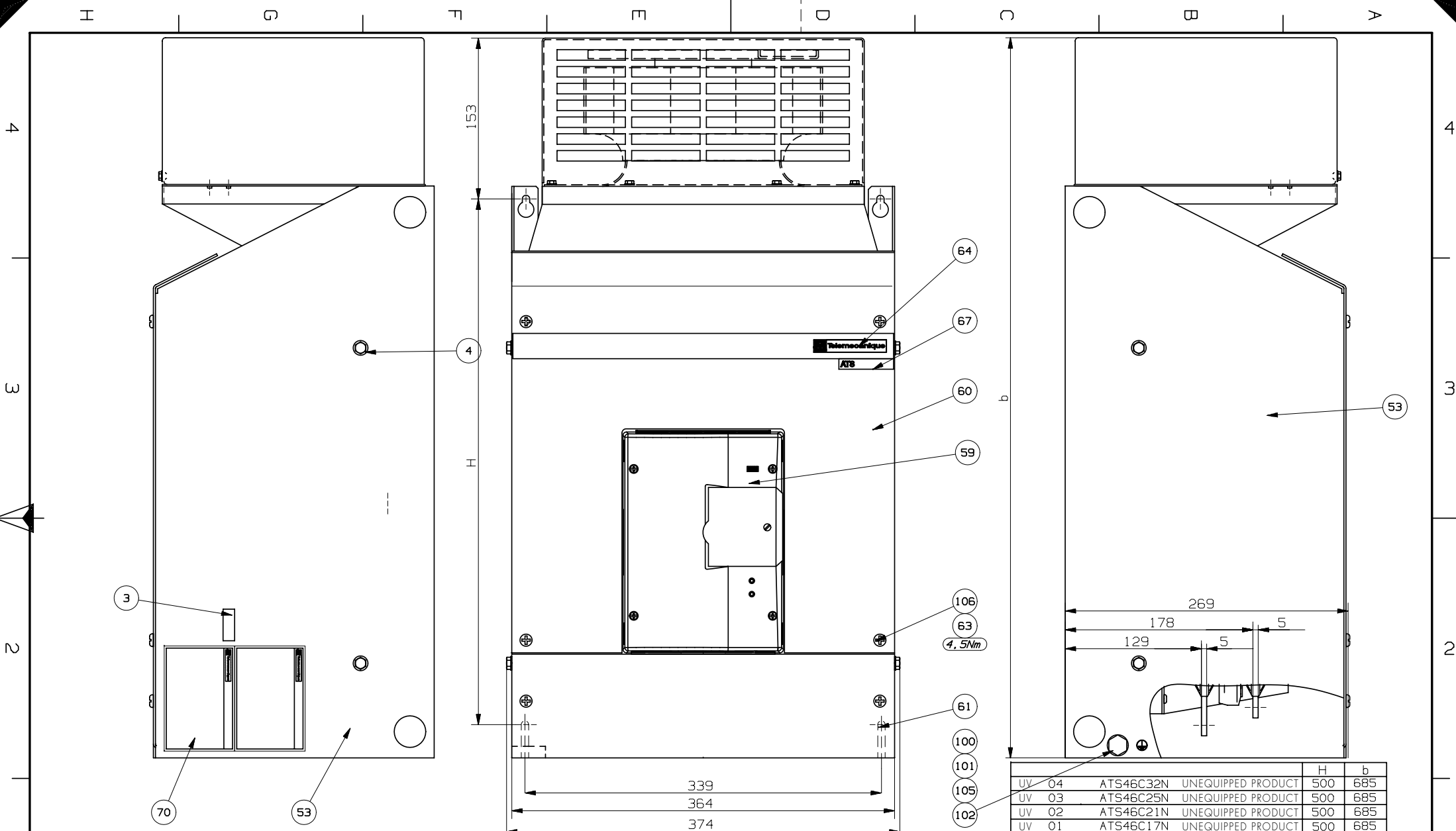
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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814941020311	A 05	J30333	18/04/97	<b>KIT PACK WIRING T2</b>
DOCUMENT REFERENCE: 149410203A01		IED: 06		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M93731035	TRANSPARENT PE SLEEVE E90M L240	0.01500	19/03/96		4.
REPLACES:	OLD: J940702				
QB702346	HC 5 BENT SPANNER	1.00000	19/03/96		5.
REPLACES:	OLD: J942602				
VD0C32Q301	GE ATS 46	1.00000	04/11/96		14.
W403832170111	TERMINAL COVER 50MM2	6.00000	19/03/96		6.
W813819520111	TIME RELAY OUTPUT CONNECTOR	1.00000	19/03/96		1.
W813819530111	CONN.CONT TAMPOGRAPHIE	1.00000	19/03/96		2.
W914941150111	MARKING LABEL 34X15 MM	1.00000	18/04/97		3.
FIN D EXPLOSION					

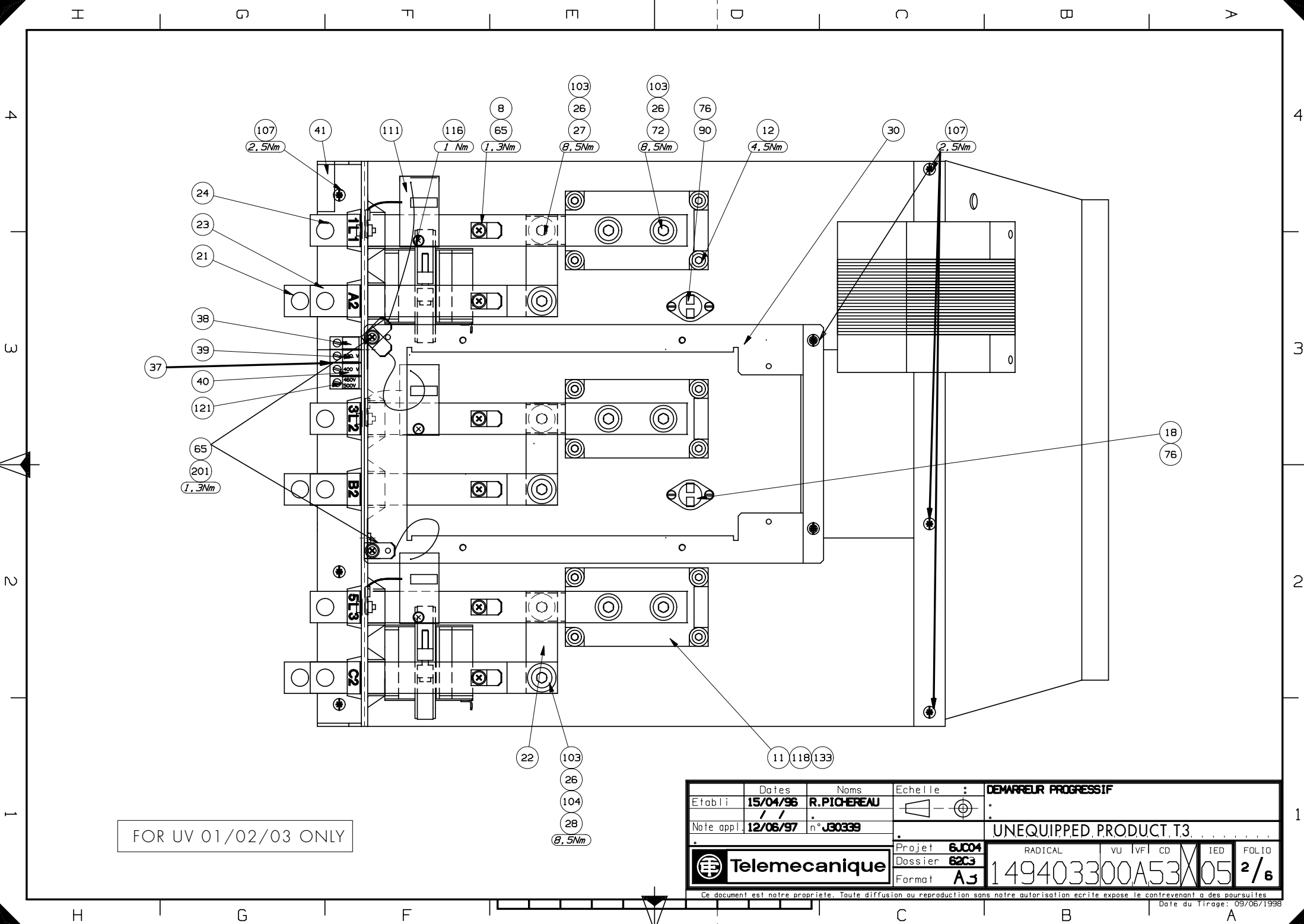
ASSEMBLY SIZE 3



			H	b
UV_04	ATS46C32N	UNEQUIPPED PRODUCT	500	685
UV_03	ATS46C25N	UNEQUIPPED PRODUCT	500	685
UV_02	ATS46C21N	UNEQUIPPED PRODUCT	500	685
UV_01	ATS46C17N	UNEQUIPPED PRODUCT	500	685

W		SYMBOLE ARTICLE		Modification		Parametre WJ	
N°de note	Date emission	Emetteur	IED				
J10308	15/04/96	R.PICHEREAU	01	Lancement des nomenclatures			
J10329	15/05/96	R.PICHEREAU	02	Lancement des plans			
J10349	15/09/96	R.PICHEREAU	03	change vis support controle/carte mesure/ajoute repere 200			
J10356	30/10/96	R.PICHEREAU	04	AJOUTE 2 FOLIO POUR T3/C32			
J30339	12/06/97	D.SENOVILLE	05	Suppression repere 200.			
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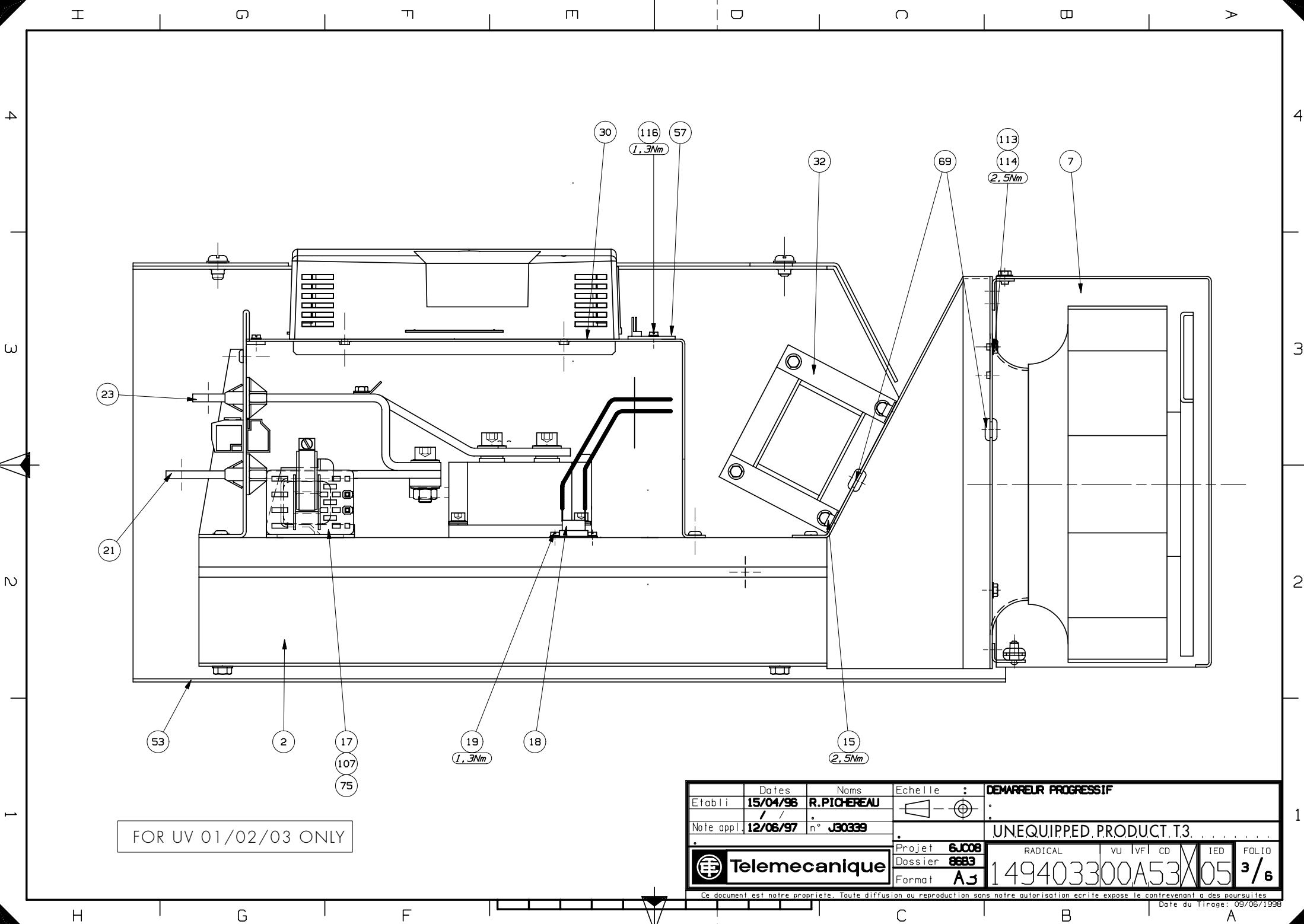
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/ /	15/04/96	R.PICHEREAU	⊕	
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Projet		6JC08		RADICAL VU IVFI CD IED FOLIO
Dossier		8883		
Format		A3		149403300A53X05 1/6



FOR UV 01/02/03 ONLY

Etabli	Dates	Noms	Echelle	DEMARREUR PROGRESSIF	
	15/04/96	R. PIGEREAU			
Note appl.	12/06/97	n° J30339		UNEQUIPPED PRODUCT T.3	
<b>Telemecanique</b>			Projet	6JC04	RADICAL
			Dossier	62C3	VU IVFI CD
			Format	A3	IED FOLIO
			149403300A53X05		2/6

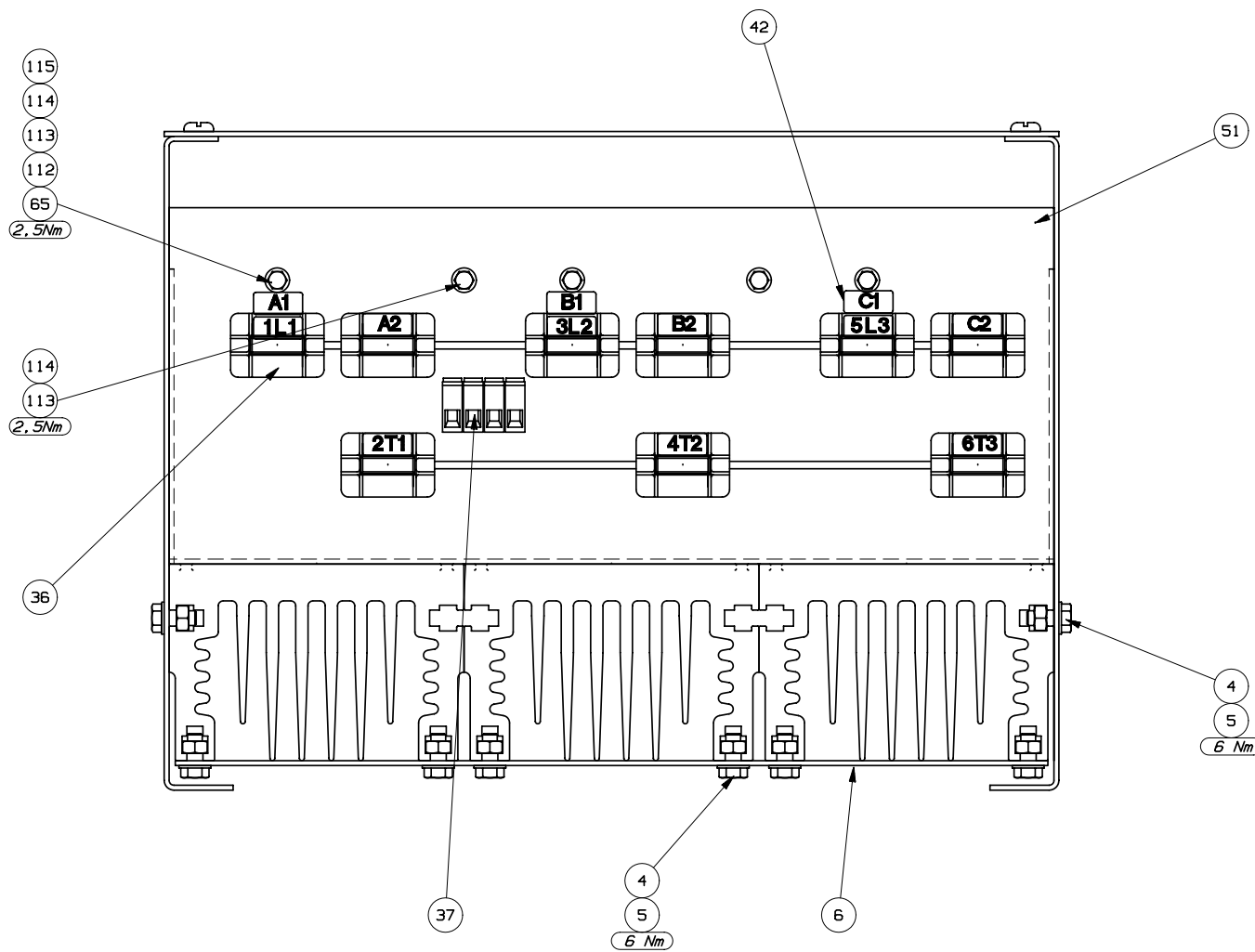
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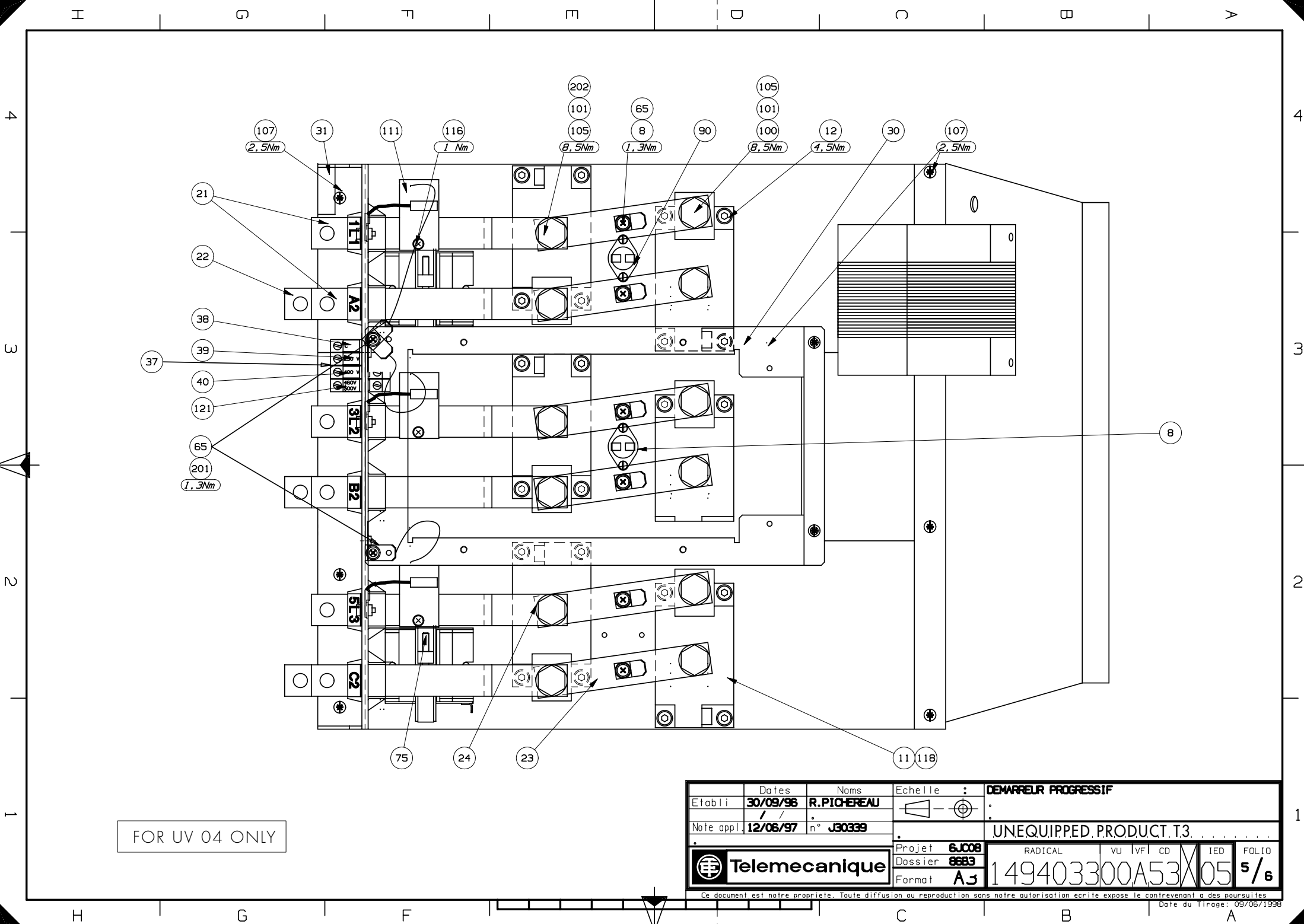
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/ /	15/04/96	R. PIGEREAU	1:1		
Note appl.	12/06/97	n° J30339	UNEQUIPPED PRODUCT T.3		
<b>Telemecanique</b>			Projet	6JC08	RADICAL
			Dossier	6683	VU IVFI CD
			Format	A3	149403300A53X05
					IED FOLIO
					3/6

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Date du Tirage: 09/06/1998



Dates		Noms		Echelle		: DEMARREUR PROGRESSIF	
Etabli	15/04/96	R. PIGEREAU		:		:	
Note appl.	12/06/97	n° J30339		:		UNEQUIPPED PRODUCT T.3	
				Projet		6JC08	
				Dossier		6683	
				Format		A3	
				149403300A53		X05	
				RADICAL		VU IVFI CD	
				IED		FOLIO	
				4/6			

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Date du Tirage: 09/06/1998

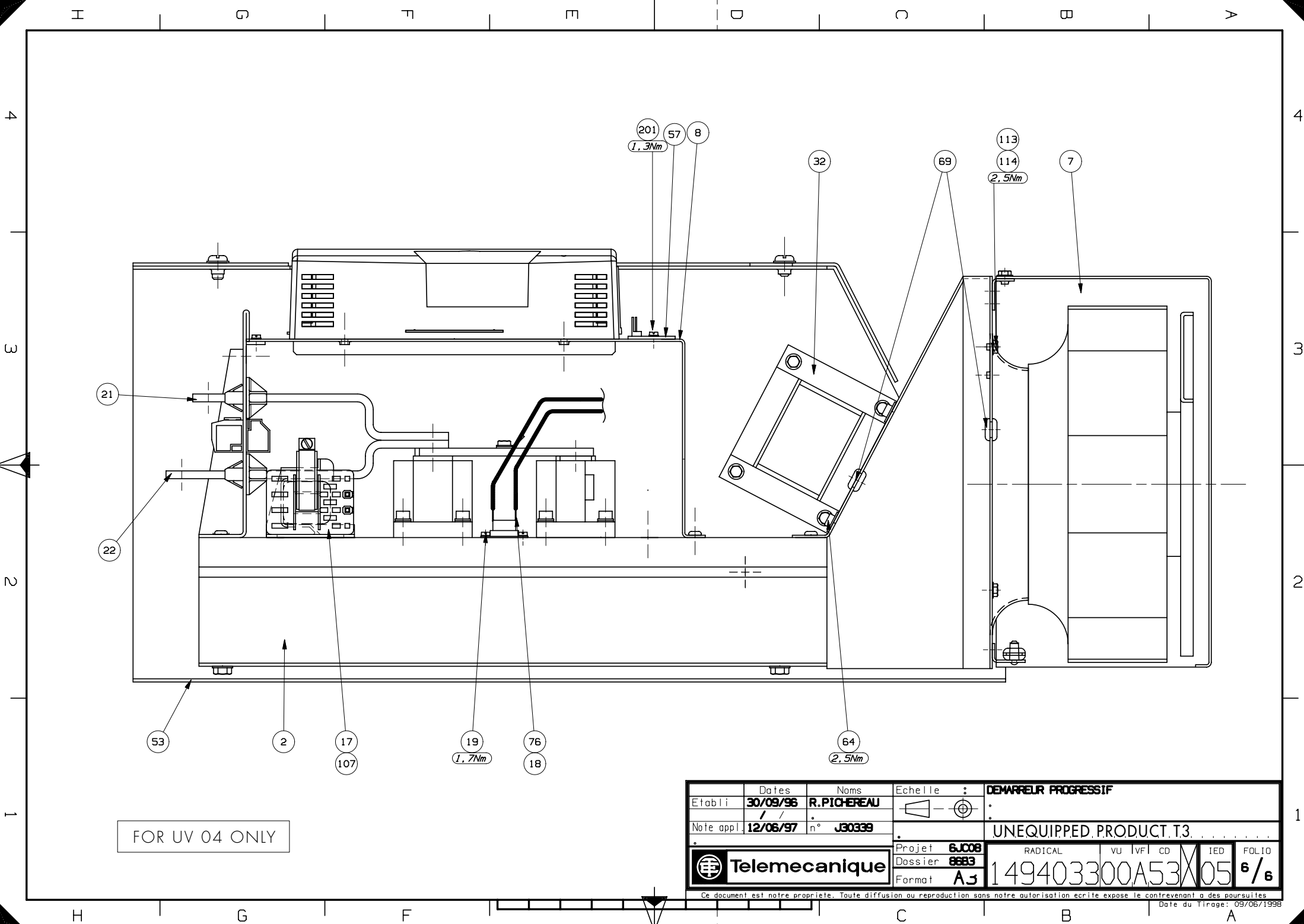


FOR UV 04 ONLY

Etabli		Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
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Note appl.		12/06/97	n° J30339		UNEQUIPPED PRODUCT T.3
Projet		6JC08			RADICAL VU IVFI CD IED FOLIO
Dossier		6683			149403300A53X05 5/6
Format		A3			

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Date du Tirage: 09/06/1998





FOR UV 04 ONLY

Dates		Noms		Echelle		: DEMARREUR PROGRESSIF	
Etabli	30/09/96	R. PIGEREAU		:		:	
Note appl.	12/06/97	n° J30339		:		: UNEQUIPPED PRODUCT T.3	
Projet		Dossier		Format		RADICAL VU IVFI CD IED FOLIO	
6JC08		6683		A3		149403300A53X05 6/6	

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Date du Tirage: 09/06/1998

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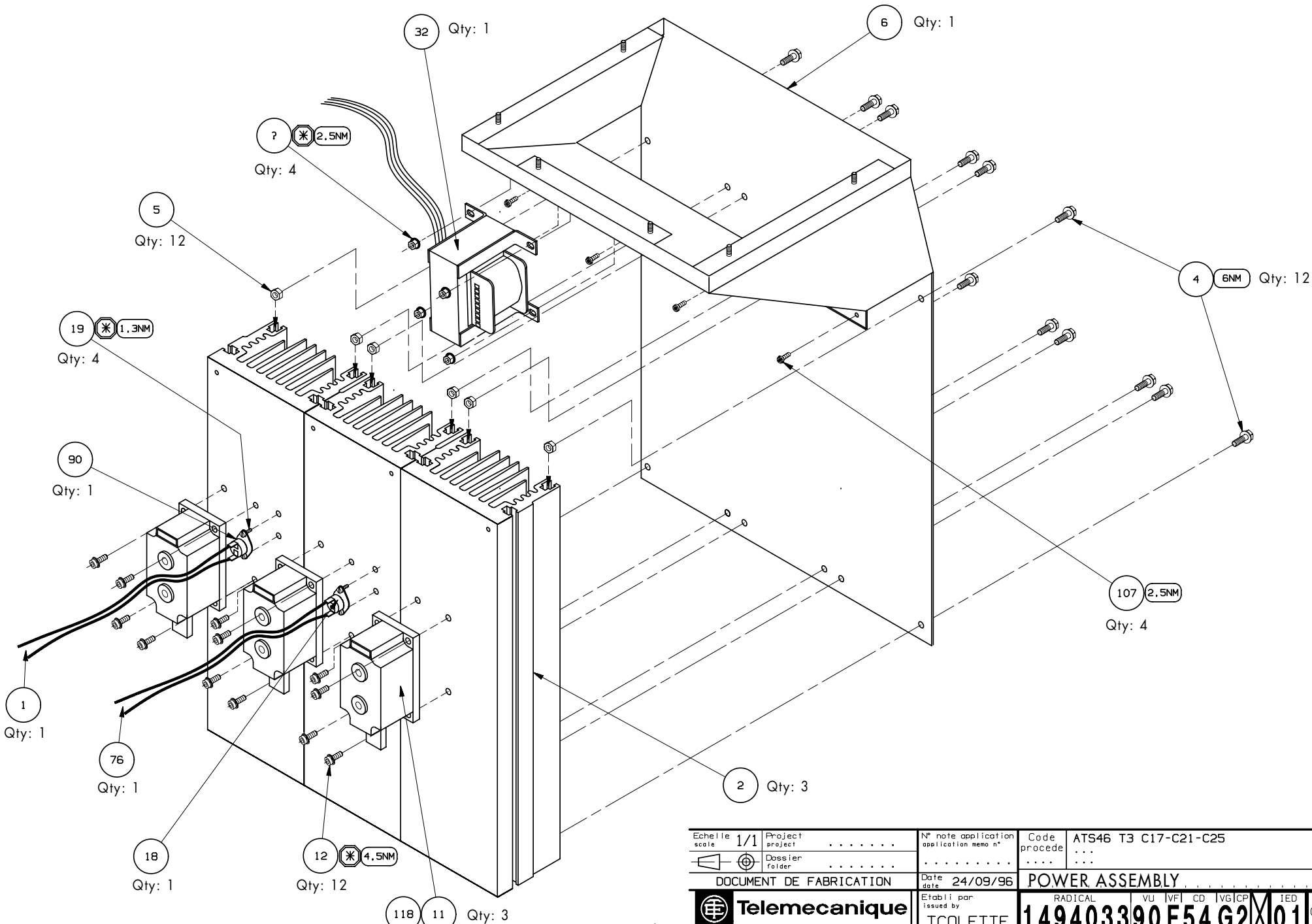
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Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procédé	ATS46 T3 C17-C21-C25
		Dossier folder	.....	Date date		
DOCUMENT DE FABRICATION				24/09/96	POWER ASSEMBLY	
<b>Telemecanique</b> GROUPE SCHNEIDER				Etabli par Issued by	RADICAL VU IVF CD IVG/CP IED FOLIO <b>149403390F54G2X01</b> 01/07	
				TCOLETTE	Date du tirage: 09/06/1998 C A D R A 8 Format A3	

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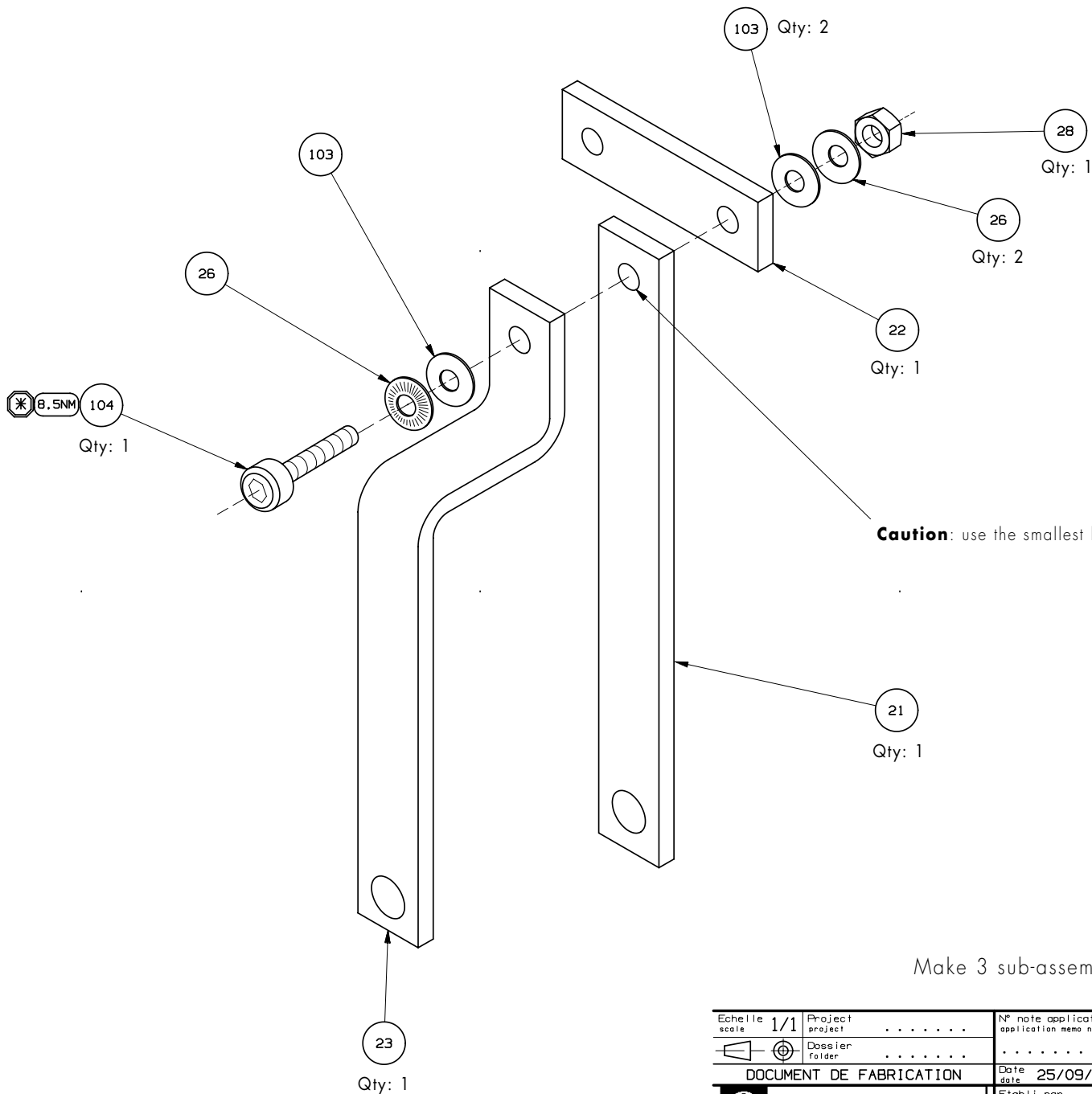
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**Caution:** use the smallest hole of bar 21 to achieve assembly

Make 3 sub-assemblies of bars by product

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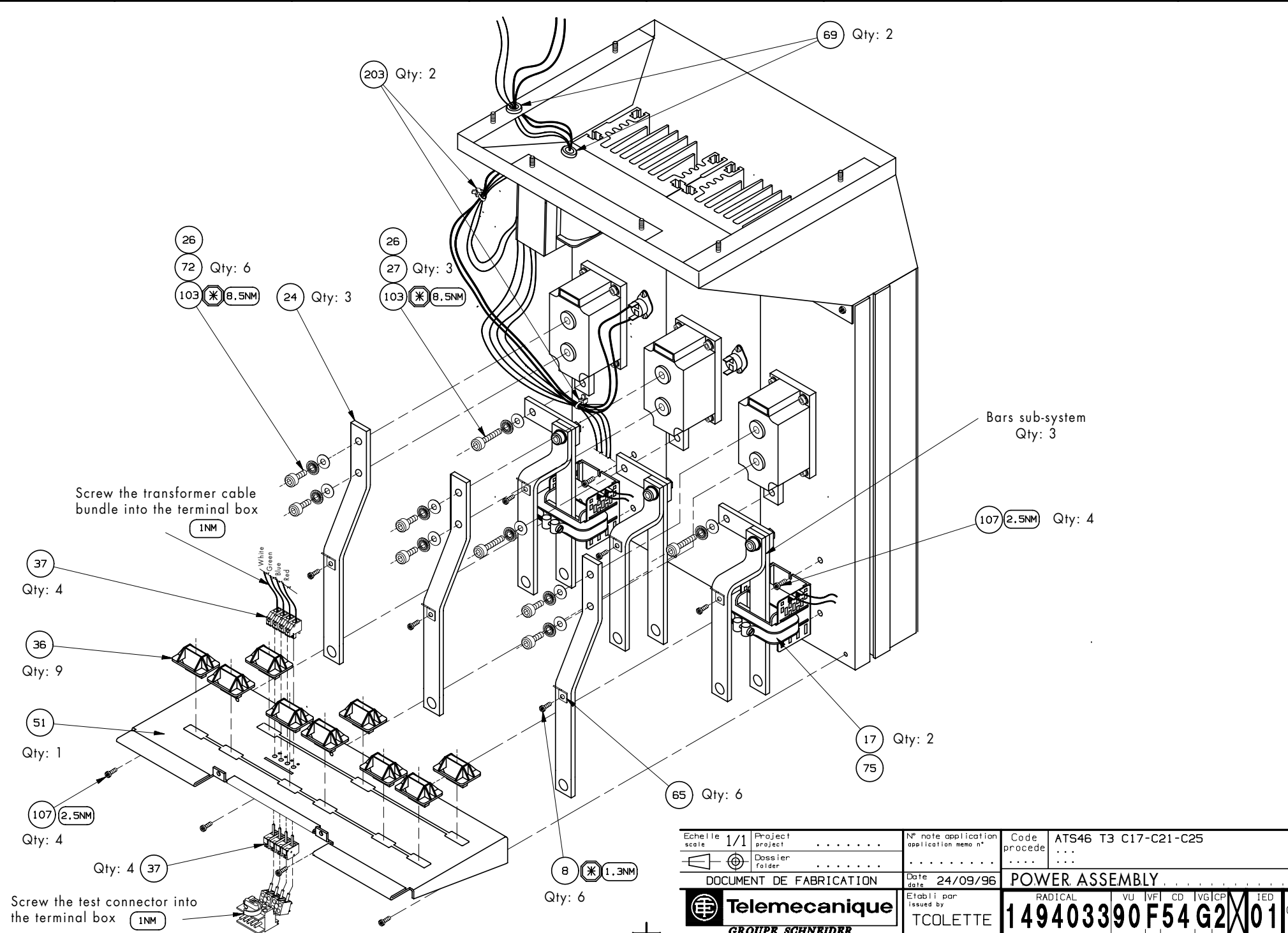
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		Dossier folder	.....	.....	.....	.....	
DOCUMENT DE FABRICATION				Date date	25/09/96		
				POWER ASSEMBLY			
Etabli par issued by		TCOLETTE		RADICAL	VU	VF	CD
				IVG	CP	IED	FOLIO
				149403390F54G2		01/02/07	



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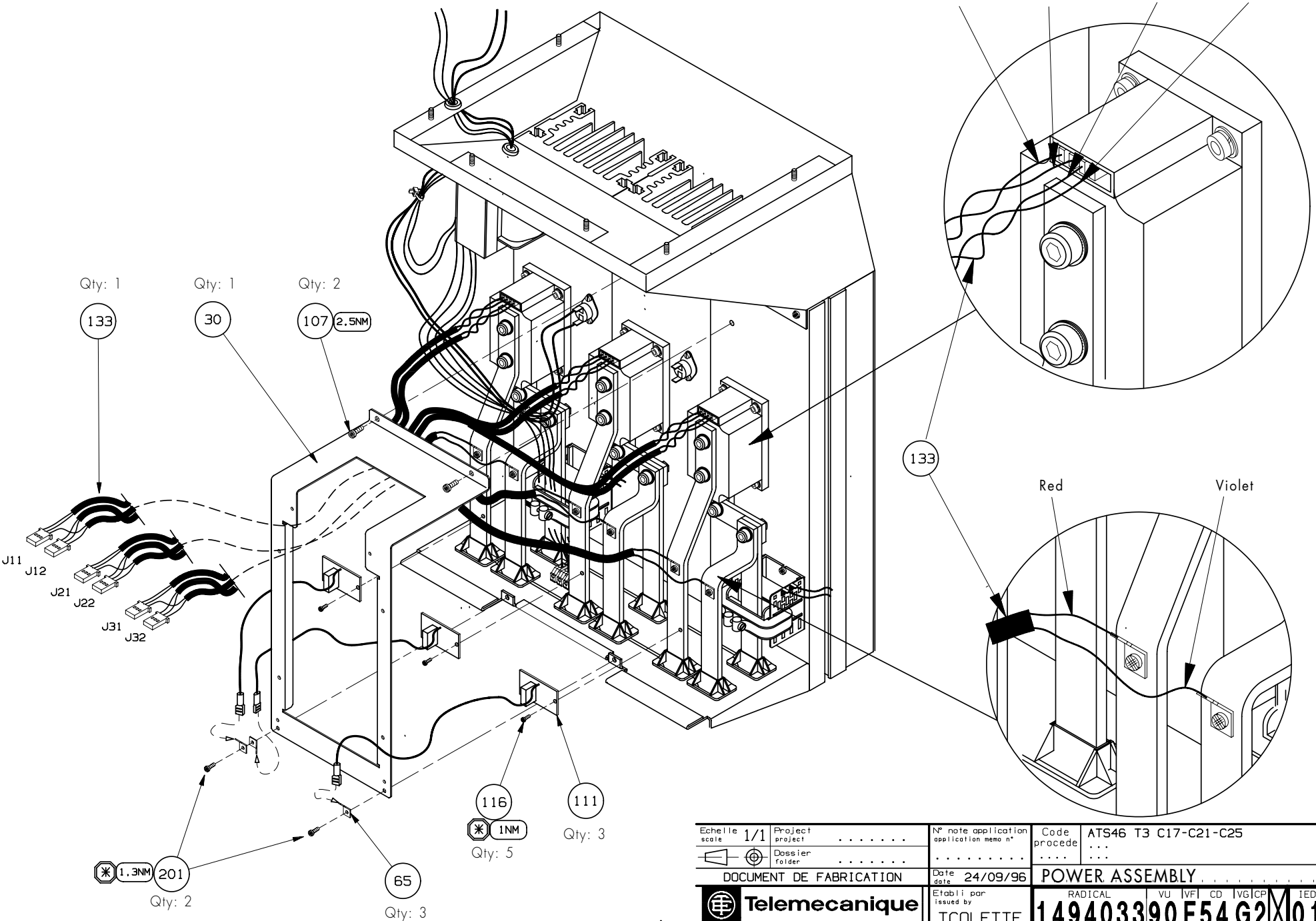


Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procédé	ATS46 T3 C17-C21-C25
		Dossier folder	.....	Date date	.....	.....
DOCUMENT DE FABRICATION				24/09/96	POWER ASSEMBLY	
Etabli par Issued by		TCOLETTE		RADICAL		VU   VFI   CD   VVG   CP   IED
149403390		F54 G2		X01		FOLIO 03/07
GROUPE SCHNEIDER				Date du tirage: 09/06/1998		Format A3

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Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procede	ATS46 T3 C17-C21-C25	
		Dossier folder	.....	Date date	.....		
DOCUMENT DE FABRICATION				24/09/96	POWER ASSEMBLY		
<b>Telemecanique</b> GROUPE SCHNEIDER		Etabli par Issued by		RADICAL VU IVF CD IVG CP IED FOLIO TCOLETTE		149403390F54G2X01 04/07	
				Date du tirage: 09/06/1998		Format A3	

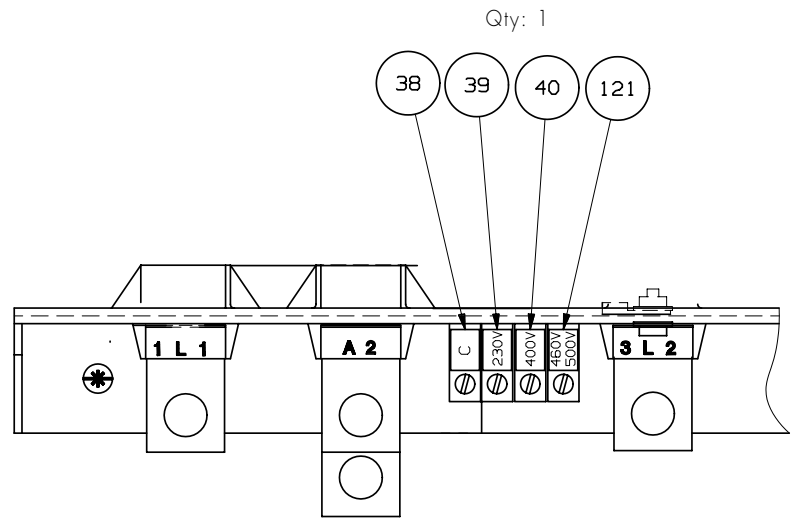
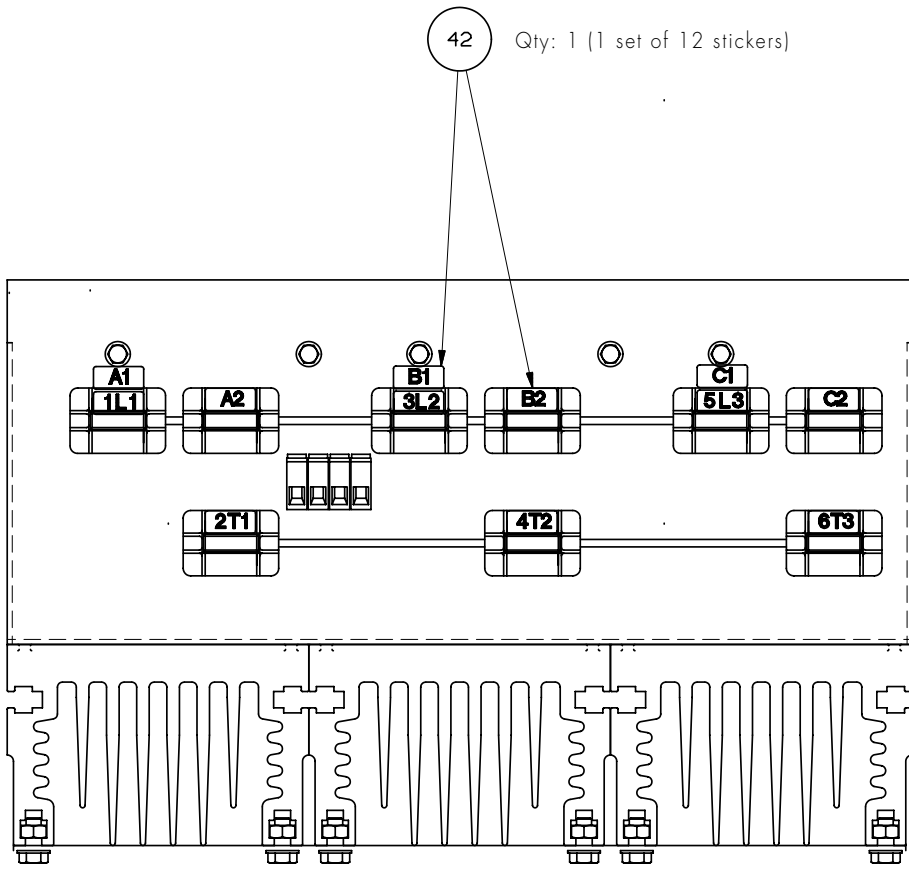
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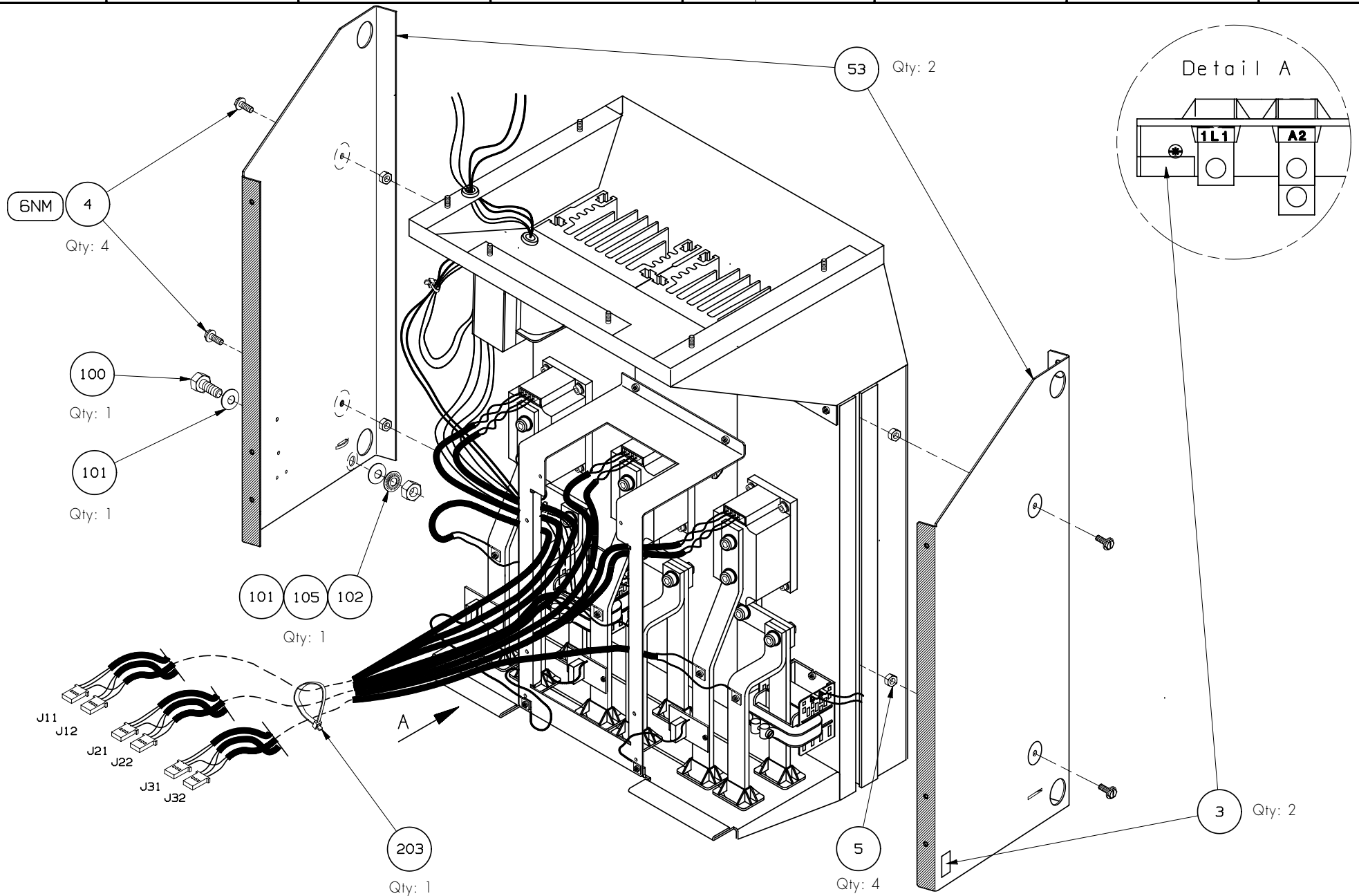
D

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Echelle scale	1/1	Project project	.....	N° note application application memo n°	.....	Code procédé	.....	ATS46 T3 C17-C21-C25
		Dossier folder	.....	Date date	30/10/96			POWER ASSEMBLY .....
DOCUMENT DE FABRICATION		Etabli par Issued by		TCOLETTE		RADICAL		VU  VF  CD  VG CP  IED
<b>Telemecanique</b> GROUPE SCHNEIDER		FOLIO 05/07		149403390F54G2X01		Date du tirage: 09/06/1998		C A D R A 8 Format A3

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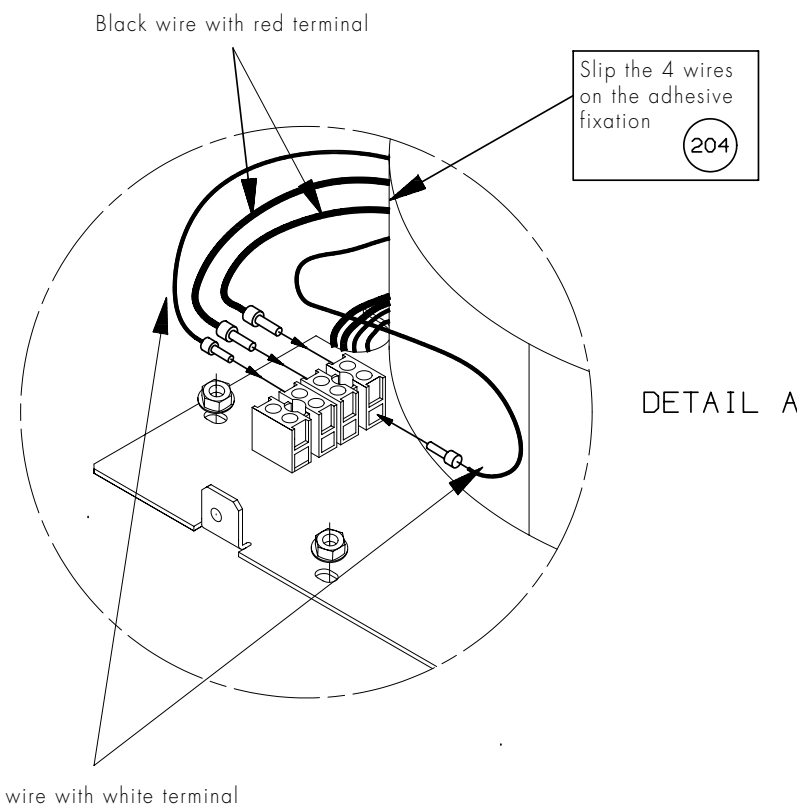
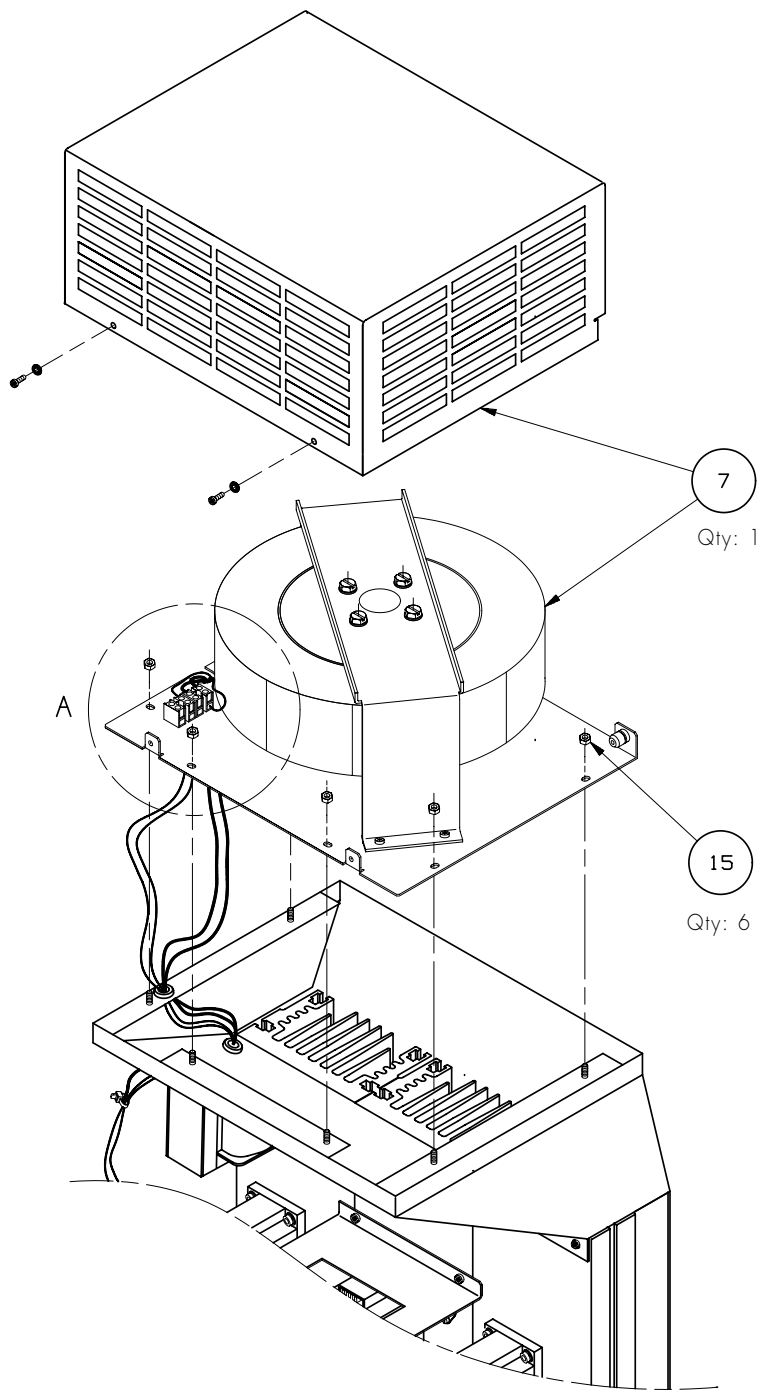


Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procédé	ATS46 T3 C17-C21-C25	
		Dossier folder	.....	Date date	.....	POWER ASSEMBLY	
DOCUMENT DE FABRICATION				04/11/96			
<b>Telemecanique</b> GROUPE SCHNEIDER		Etabli par Issued by		RADICAL VU IVFI CD IVGICP IED FOLIO TCOLETTE		<b>149403390F54G2X01</b> 06/07	

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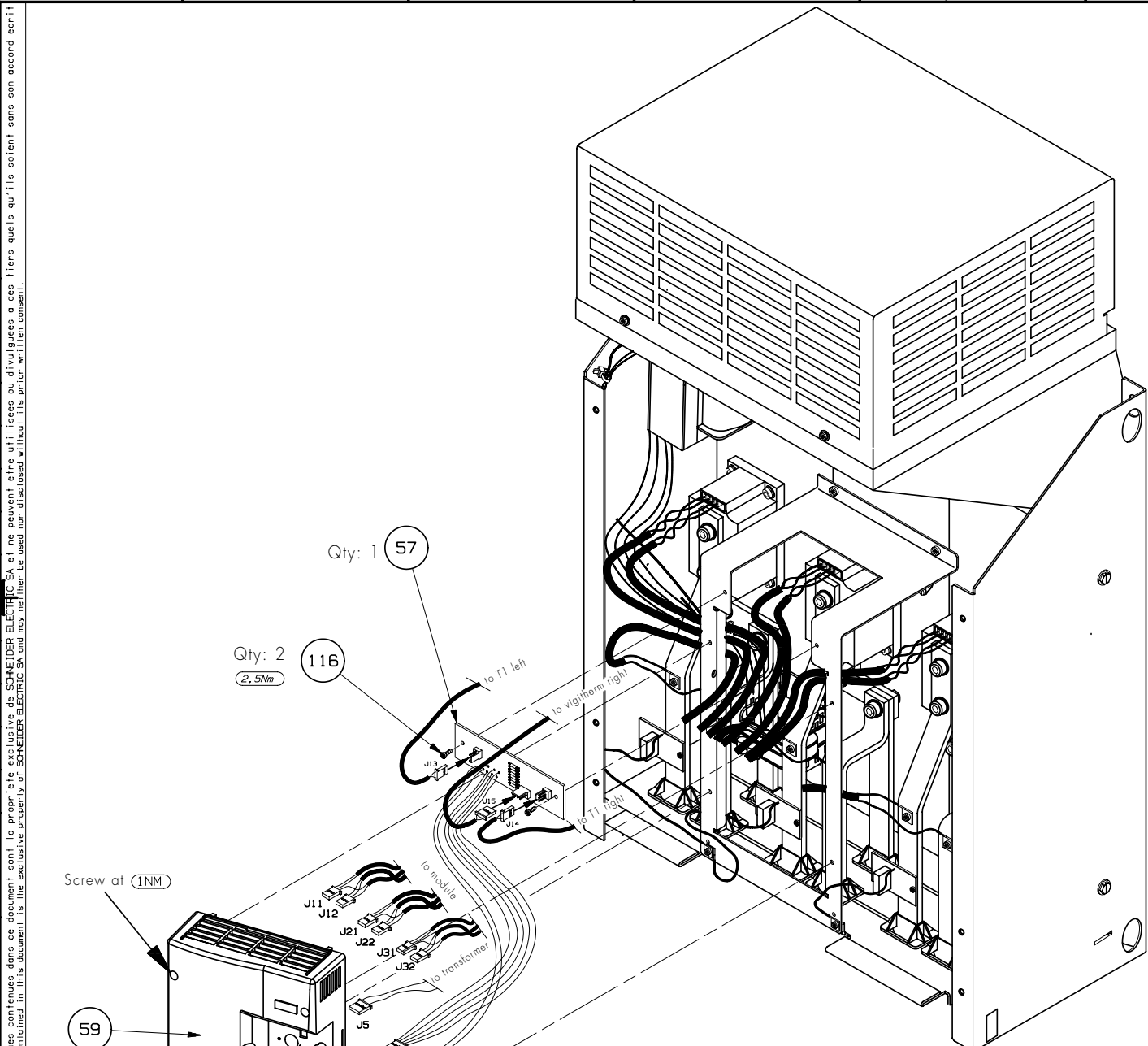
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Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procede	ATS46 T3 C17-C21-C25		
		Dossier folder	.....		.....			
DOCUMENT DE FABRICATION				Date date	29/10/96			
<b>Telemecanique</b> GROUPE SCHNEIDER				Etabli par issued by	RADICAL VU IVF CD IVG/CP IED FOLIO <b>TCOLETTE</b>			
				<b>149403390F54G2</b>		<b>01</b>		
				Date du tirage: 09/06/1998 C A D R A				
				8 Format A3				

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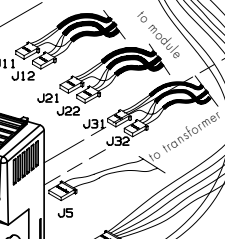
Screw at (1NM)

(59)

Qty: 1

Qty: 1 (57)

Qty: 2 (116)  
(2,5Nm)



to module

to transformer

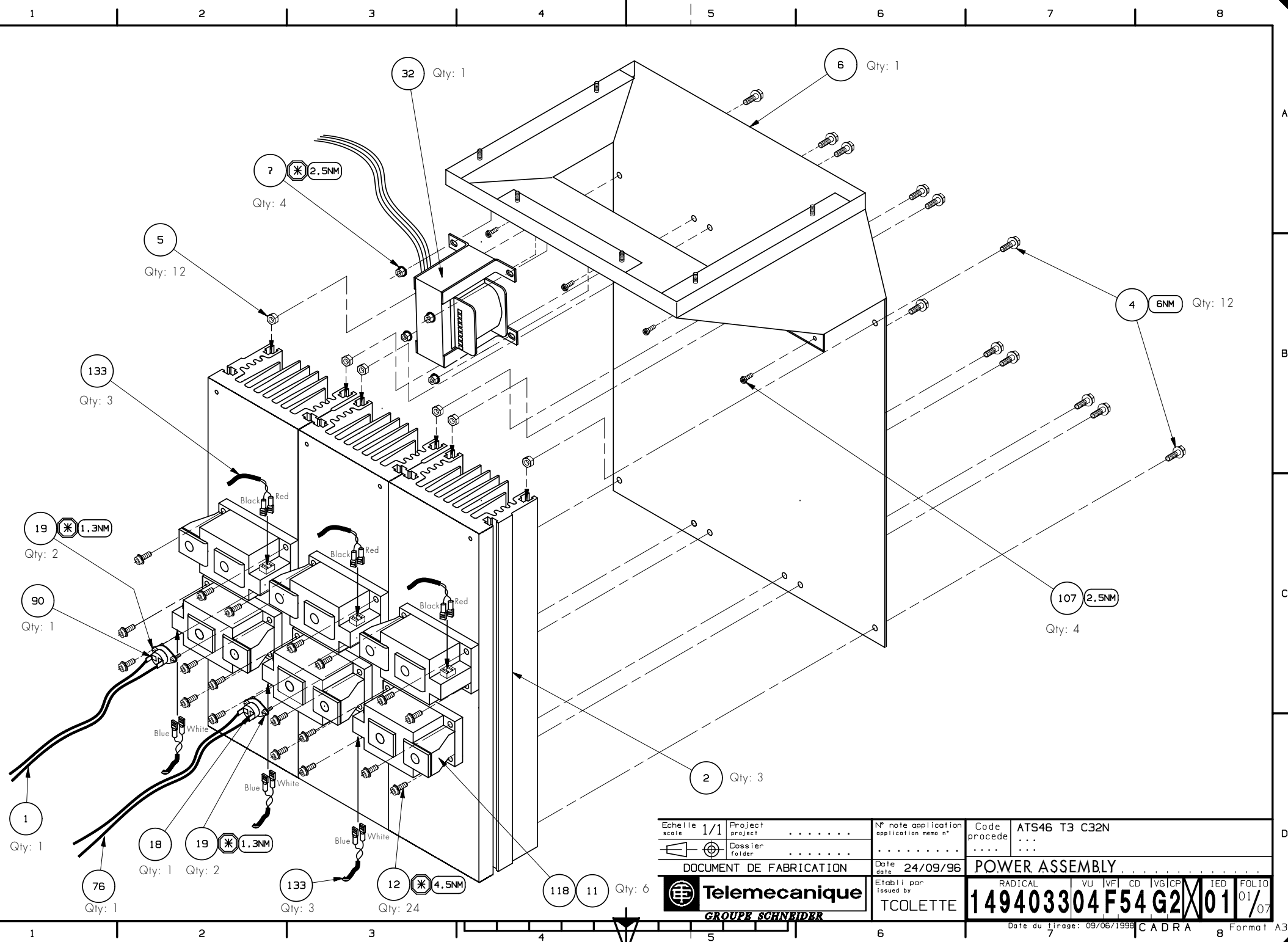
to T1 left

to T1 right

to vigihem right

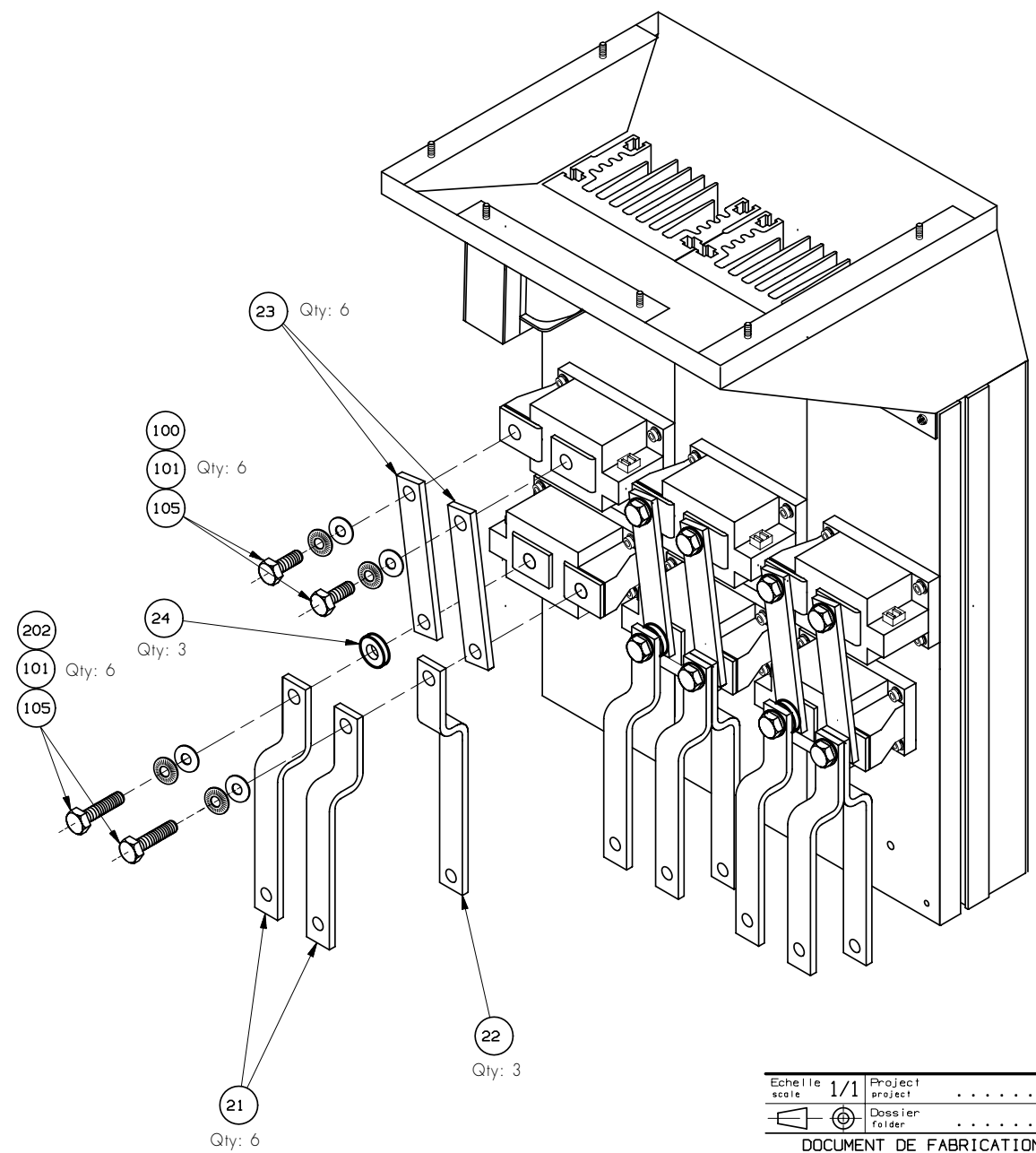
Echelle scale	Project project	N° note application application memo n°	Code procède	ATS46 T3 C17-C21-C25
	Dossier folder			
DOCUMENT DE FABRICATION		Date date	CARD INTEGRATION	
<b>Telemecanique</b> GROUPE SCHNEIDER		Etabli par issued by	RADICAL VU VFI CD IVG/CP IED FOLIO <b>TCOLETTE 149403390F54G3X01</b>	
		Date du tirage: 09/06/1998		Format A3

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		Dossier folder	.....	Date date	24/09/96		
DOCUMENT DE FABRICATION				POWER ASSEMBLY			
Etabli par Issued by				RADICAL VU IVF CD IVG/CP IED FOLIO			
TCOLETTE				149403304 F54 G2 X01 01/07			
				Date du tirage: 09/06/1998 C A D R A 8 Format A3			

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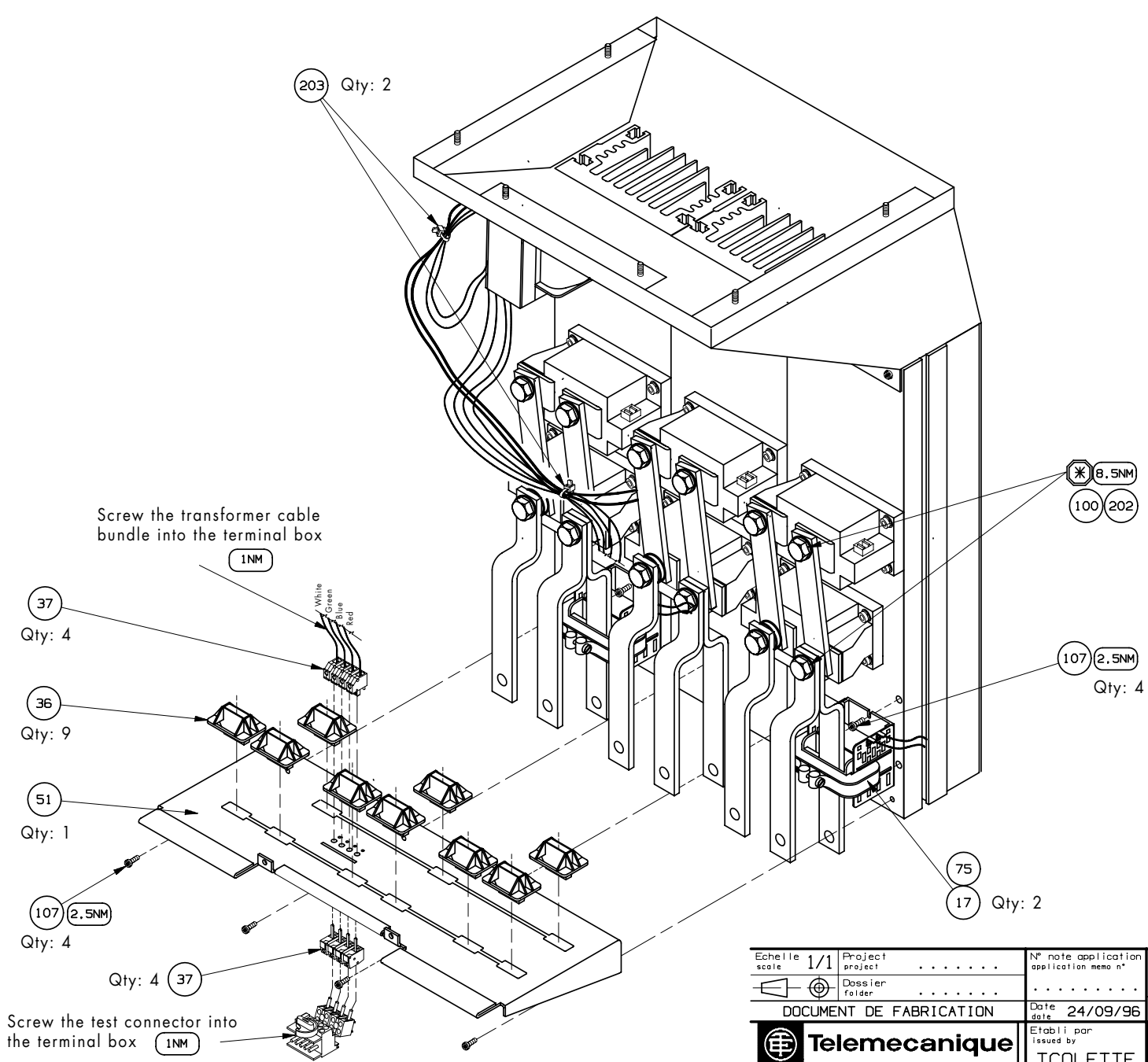


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DOCUMENT DE FABRICATION				Date date	24/09/96		
<b>Telemecanique</b> GROUPE SCHNEIDER				Etabli par issued by	RADICAL VU IVF CD IVG CP IED FOLIO TCOLETTE <b>149403304 F54 G2 X01</b> 02/07		

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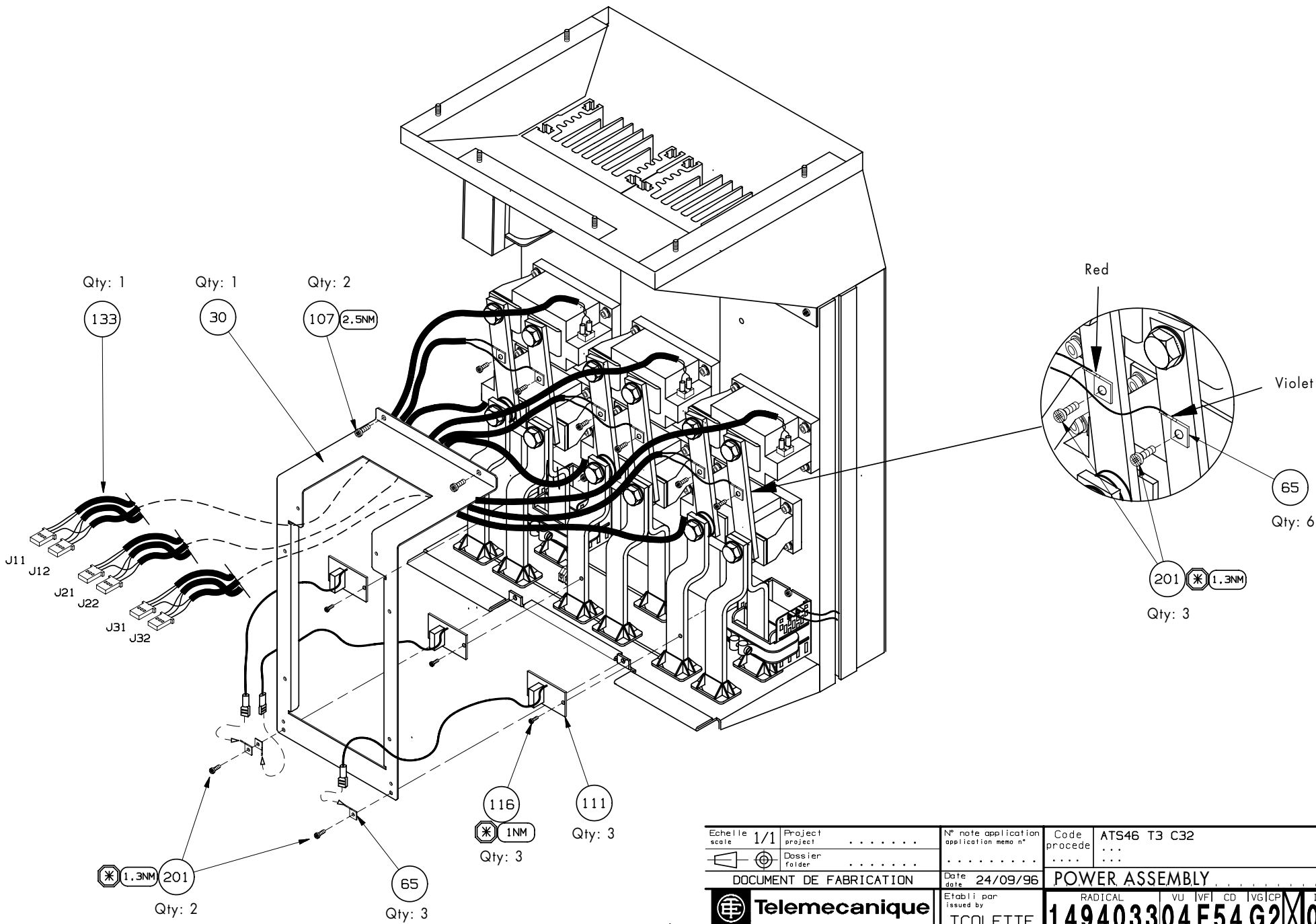
1 2 3 4 5 6 7 8



Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procéde	ATS46 T3 C32N	
		Dossier folder	.....	Date date	POWER ASSEMBLY		
DOCUMENT DE FABRICATION				24/09/96			
<b>Telemecanique</b> GROUPE SCHNEIDER				Etabli par issued by	RADICAL VU IVF CD IVG/CP IED FOLIO <b>149403304 F54 G2 X01</b> 03/07		
				TCOLETTE	Date du tirage: 09/06/1998 C A D R A 8 Format A3		

1 2 3 4 5 6 7 8

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Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procède	ATS46 T3 C32						
		Dossier folder	.....	Date date	.....							
DOCUMENT DE FABRICATION				24/09/96	POWER ASSEMBLY							
Etabli par Issued by		TCOLETTE		RADICAL		VU	IVF	CD	IVG	CP	IED	FOLIO
				149403304		F54	G2	X01			04	/07
Date du tirage: 09/06/1998 C A D R A 8 Format A3												

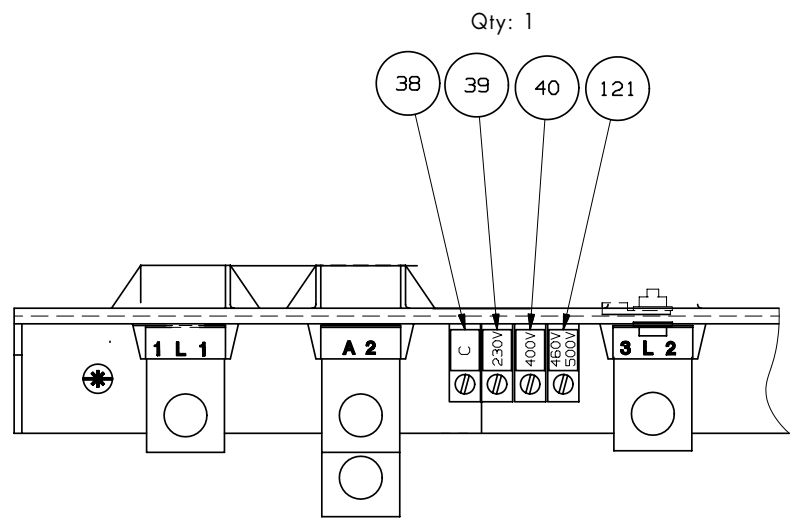
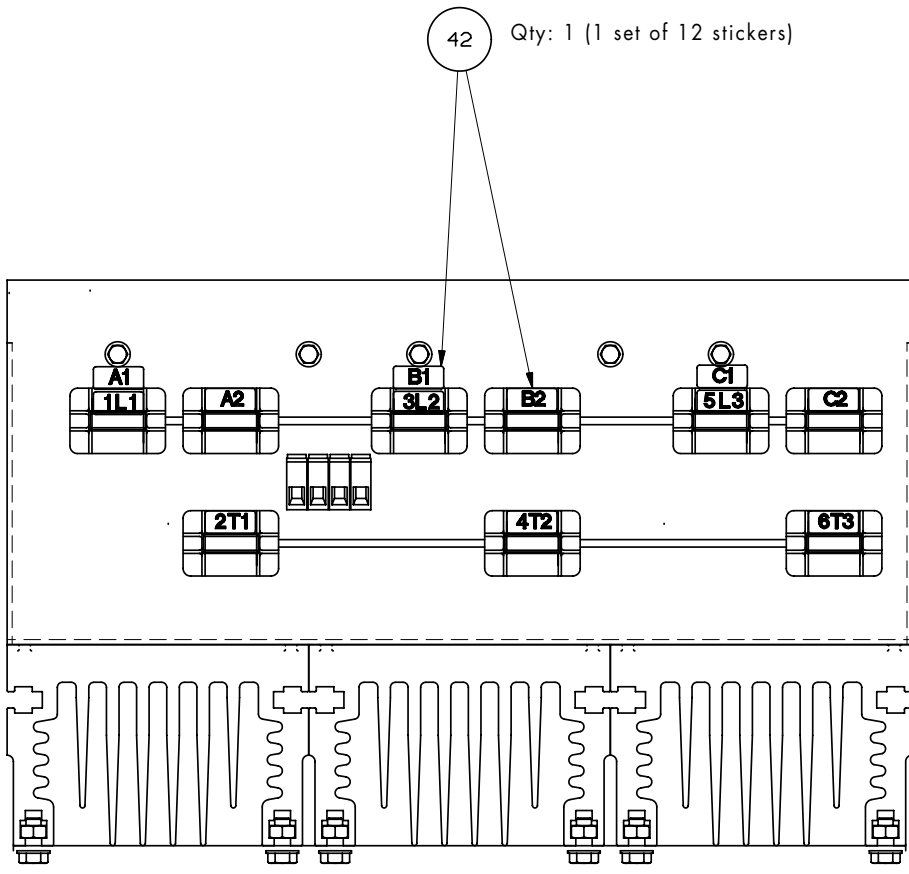
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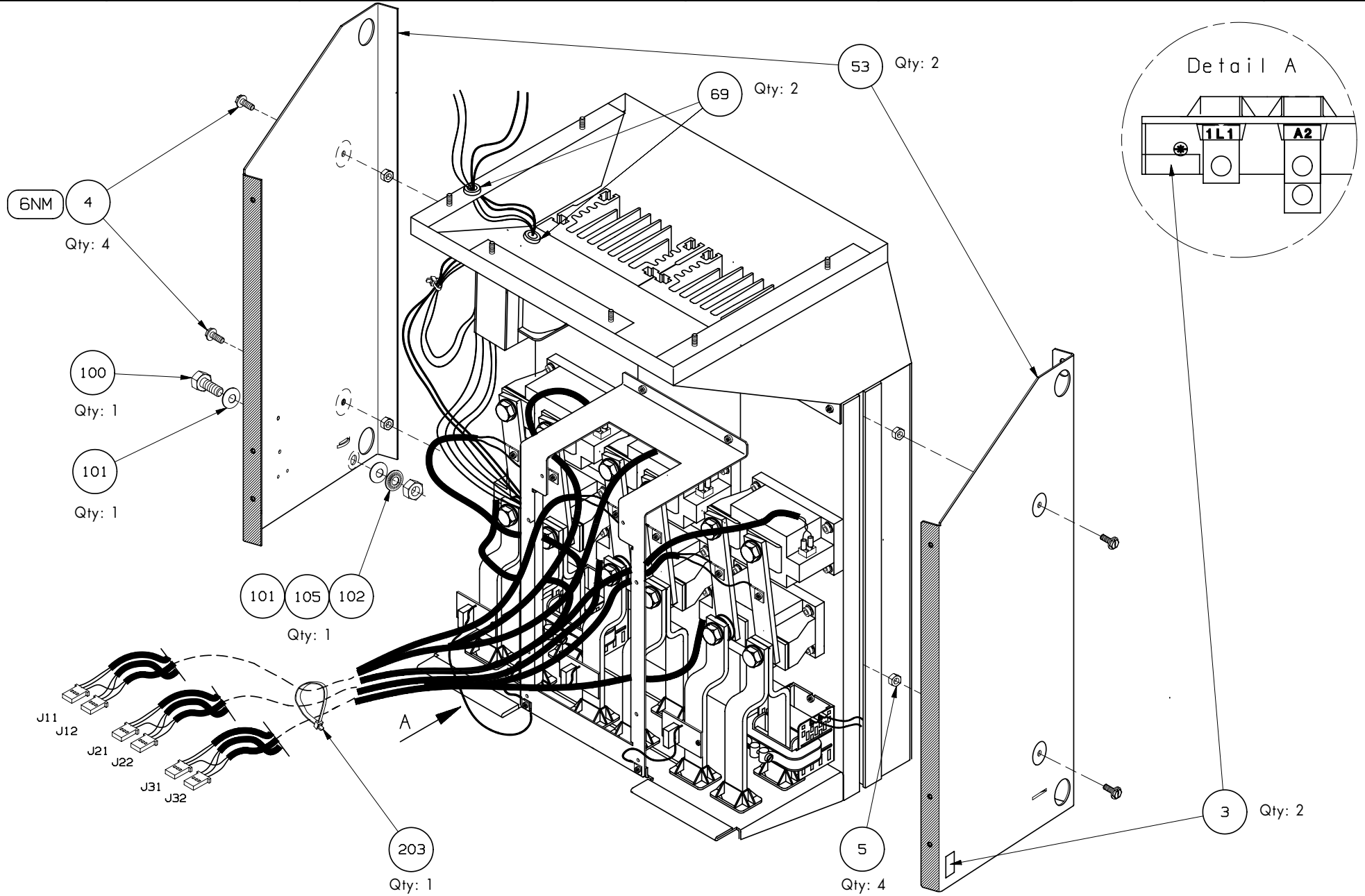
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Echelle scale 1/1	Project project .....	N° note application application memo n° .....	Code procédé .....	ATS46 T3 C32
	Dossier folder .....	Date date 30/10/96	POWER ASSEMBLY	
DOCUMENT DE FABRICATION		Etabli par Issued by TCOLETTE	RADICAL	VU   VFI   CD   IVG   CP   IED
<b>Telemecanique</b> GROUPE SCHNEIDER		<b>149403304 F54 G2 X 01</b>		FOLIO 05 / 07
			Date du tirage: 09/06/1998	Format A3

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Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procédé	ATS46 T3 C32
		Dossier folder	.....	Date date	.....	.....
DOCUMENT DE FABRICATION				04/11/96	POWER ASSEMBLY	
<b>Telemecanique</b> GROUPE SCHNEIDER				Etabli par Issued by	RADICAL VU IVFI CD IVG/CP IED FOLIO TCOLETTE <b>149403304 F54 G2 X01</b> 06/07	

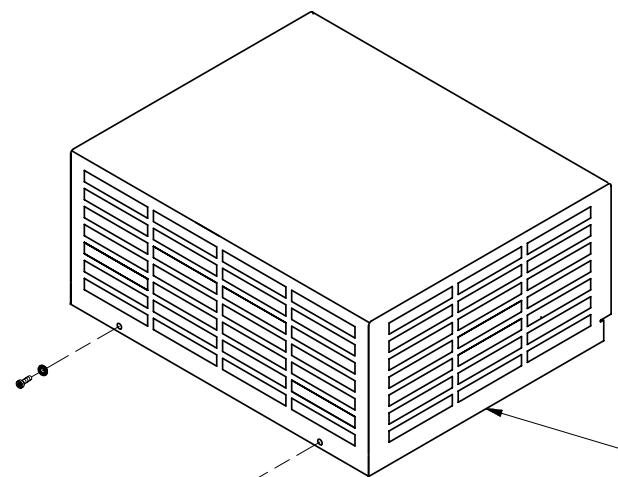
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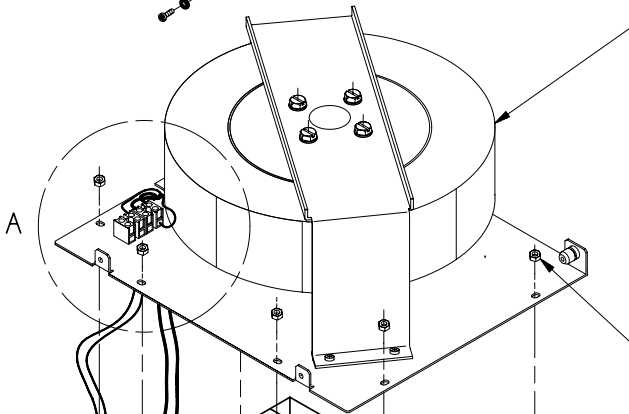
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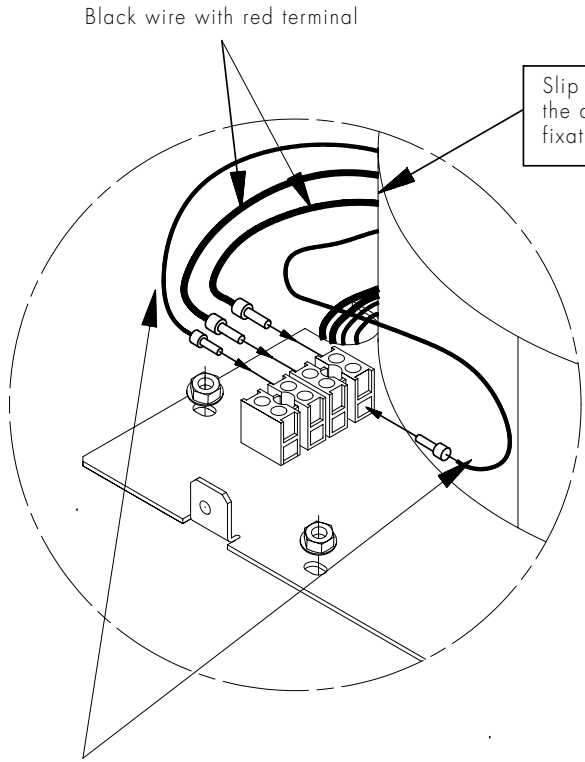
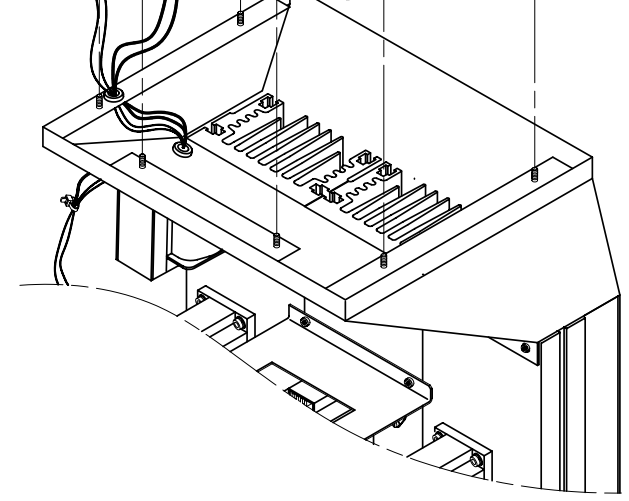
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7  
Qty: 1



15 2.5NM  
Qty: 6



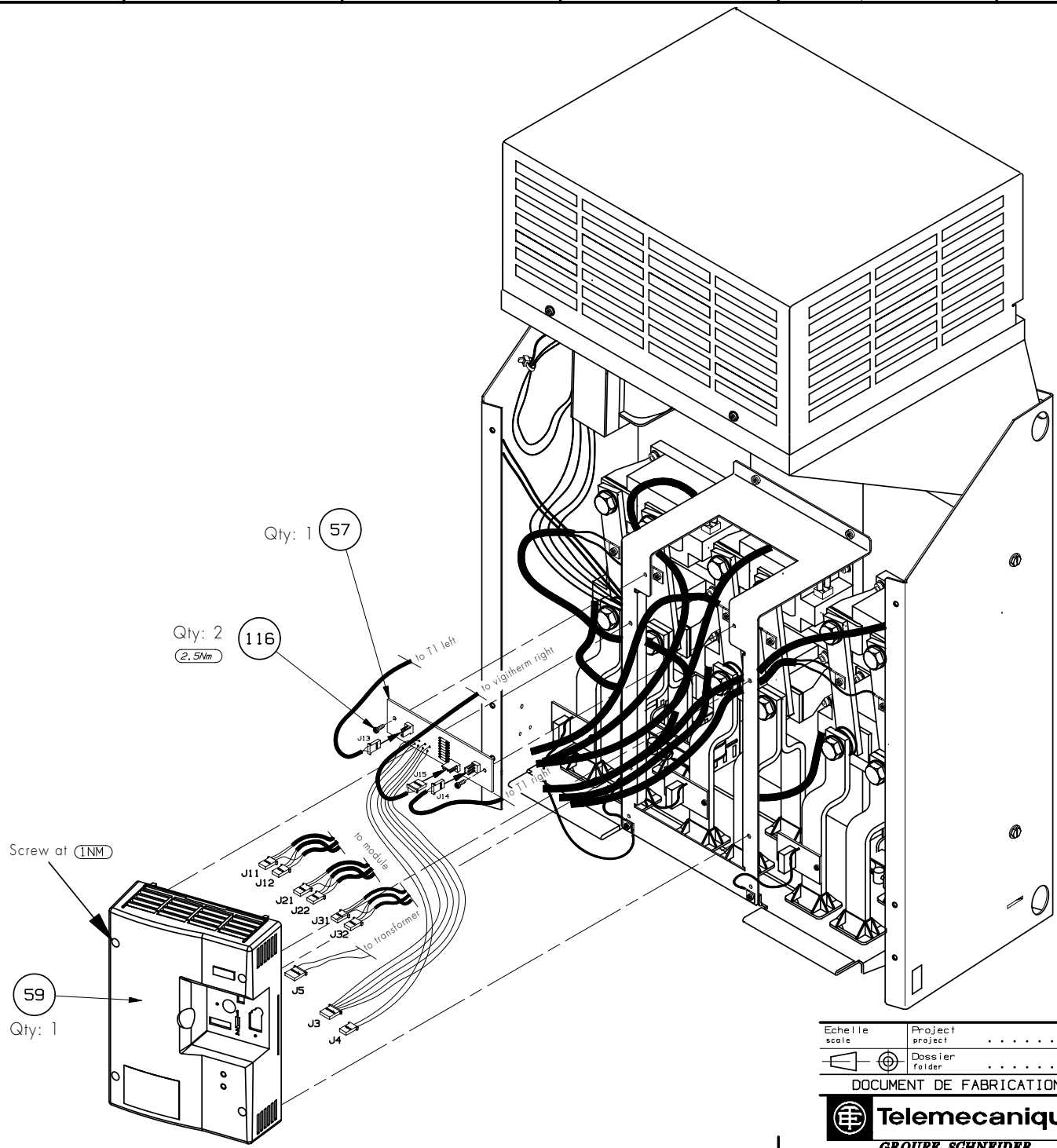
Slip the 4 wires on the adhesive fixation  
204

DETAIL A

Echelle scale	1/1	Project project	.....	N° note application application memo n°	Code procède	ATS46 T3 C32	
		Dossier folder	.....				
DOCUMENT DE FABRICATION				Date date	29/10/96 POWER ASSEMBLY		
<b>Telemecanique</b> GROUPE SCHNEIDER				Etabli par issued by	RADICAL VU VFI CD IVG/CP IED FOLIO TCOLETTE <b>149403304 F54 G2 X 01</b> 07/07		
				Date du tirage: 09/06/1998 C A D R A			
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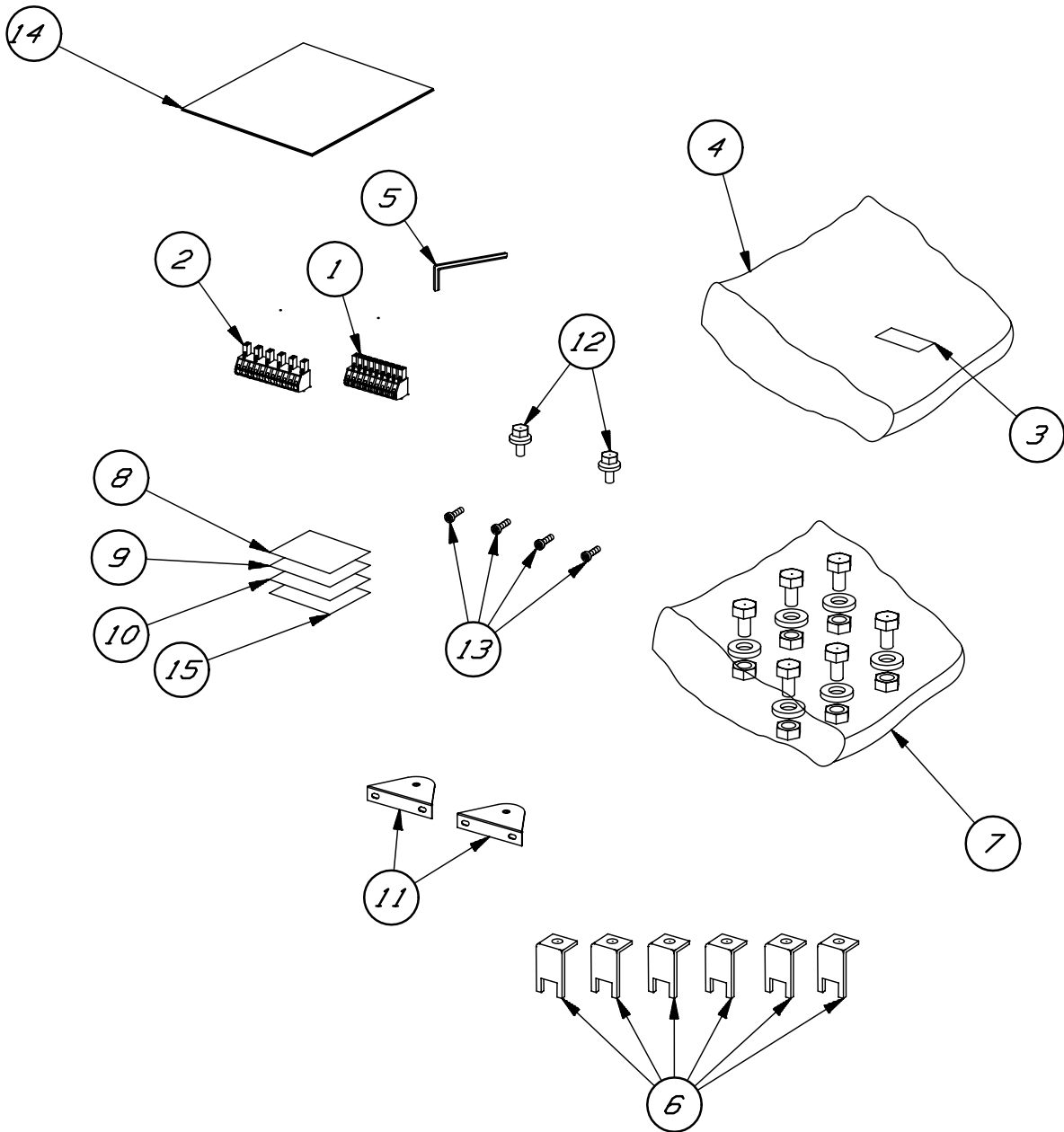


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Echelle scale	Project project	N° note application application memo n°	Code procède	ATS46 T3 C32
	Dossier folder			
DOCUMENT DE FABRICATION		Date date	CARD INTEGRATION	
<b>Telemecanique</b> GROUPE SCHNEIDER		Etabli par issued by	RADICAL VU VFI CD IVG/CP IED FOLIO <b>149403304 F54 G3 X01</b> 01/01	
		TCOLETTE	Date du tirage: 09/06/1998 C A D R A 8 Format A3	

4



SYMBOLE ARTICLE					
N° de note	Date emission	Emetteur	IED	Modification	Parametre VU
J10308	12/04/96	R.PICHEREAU	01	Lancement des nomenclatures	
J10327	10/06/96	R.PICHEREAU	02	diffusion du plan	
J10356	31/10/96	R.PICHEREAU	03	ajoute guide d'exploitation	
J10368	31/11/96	R.PICHEREAU	04	ajoute etiquette rep 15	
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.	. / / .	.	.	.	.
Dates		Noms		Echelle : 1	
Etabli	04/06/96	R.PICHEREAU		DEMARREUR PROGRESSIF	
	/ /	NA			
Note appl.	31/11/96	n° J10368		KIT PACK WIRING	
Projet		6JC08		RADICAL	
Dossier		88C2		VU   VF   CD	
Format		A1		IED FOLIO	
Telemecanique		149410200A53		04 1/1	

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Date du Tirage: 08/07/1998

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### 1 - RANGE OF IMPLEMENTATION

\_\_\_\_\_

#### Ambient temperature.

- Running (if >40°C) 60 °C  
 - Storage (if >40°C) 70 °C

Installation altitude (if >1 000 m) \_\_\_\_\_ m

\_\_\_\_\_

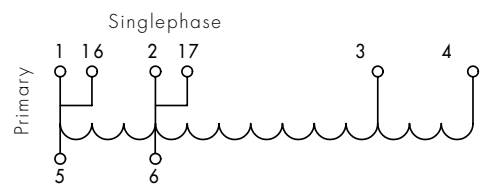
Rated power 120 VA  
 Rated frequency 50/60Hz

Singlephase transformer   
 triphase

#### 3.1 Servicing

Continuous servicing S1   
 Temporary servicing S2  : if yes, running duration \_\_\_\_\_ mn  
 Periodic intermittent servicing S3  : if yes, cycle \_\_\_\_\_ mn run coefficient \_\_\_\_\_ %

#### 3.2 Connection diagram



#### 3.3 Primary winding.

Reference	1 - 2	1 - 3	1 - 4
Rated eff. volt. (V)	225 V ± 17%	390 V ± 17%	475 V ± 17%

Rated eff. intensity (I) at max vacuum \_\_\_\_\_ 40 mA

#### 3.4 Secondary winding

Reference	5 - 6 (*)	16-17 (*)	(1) With rated primary voltage and rated secondary intensity. (on each secondary wiring)
Rated eff. volt. (V) (1)	225 V ± 5%	225 V ± 5%	
Rated eff. intensity (I)	1 A	100 mA	

Rated eff. volt. (V) (2) at max vacuum 250 V 250 V

(1) With rated primary voltage and rated secondary intensity. (on each secondary wiring)  
 (2) With rated primary voltage

(\*) Self-transformer running on connections marked 5, 6, 16 and 17

#### 3.5 Earth connection test voltage

This tension is alternatively applied between each wiring and the other ones connected to the transformer earth.  
 If the conditions are different, they have to be specified in chapter 7: particular conditions.  
 Value kept for the test voltage 2 500 V AC

### 4 - MANUFACTURING CHARACTERISTICS

These transformers are intended to be used on 50-60 Hz network. Class \_\_\_\_\_  
 They follow the specification NF C 52-200 = Rated power ≤ 16 kVA, rated frequency ≤ 500 Hz, rated voltage ≤ 1100 V.  
 4.2 Protection degree IP00

### 2 - INSTALLATION AND ASSEMBLY CONDITIONS

4.3 Cooling mode (to be specified by the manufacturer)  
 Dry transformer  Soaked transformer  Coiled transformer   
 Circuit  Coated transformer

4.4 Processing  
 Execution II according to guide UTE C63-100

### 3 - ELECTRIC CHARACTERISTICS

It will be strictly obliged to include:

- Industrial symbol.
- Manufacturer name or logo.
- Code date

**W814940590111xx**  
 ↑  
 Item identification

### 6 - PACKING

Expanded polystyrene is not allowed.

### 7 - PARTICULAR CONDITIONS

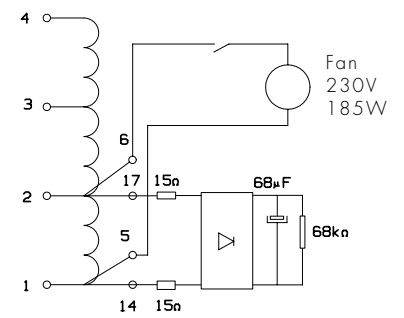
SELF-TRANSFORMER RUNNING.  
 Transformer complies with U.L. specifications, concerning all the insulation materials, leakage lines and in-air distances respects.  
 Humidity test according to IEC 68-2-23 and 68-2-30

### 8 - COILING SPECIFICATION

Insulation varnish must comply with U.L. specifications.

### 9 - QUALIFICATION DYNAMIC TEST

- 9.1 Test description.  
 Primary: high voltage wiring supply (1-4).  
 Secondary: replace real loads in the operation layout by resistances. Their value is calculated to obtain rated current of each coiling for primary rated voltage.
- 9.2 Environment.  
 Temperature test = 60 °C.
- 9.3 Test cycle definition.  
 . Network voltage = rated voltage + 17%  
 . Energising = 2s.  
 . De-energising = 2 s.
- 9.4 Test duration.  
 240 hours.

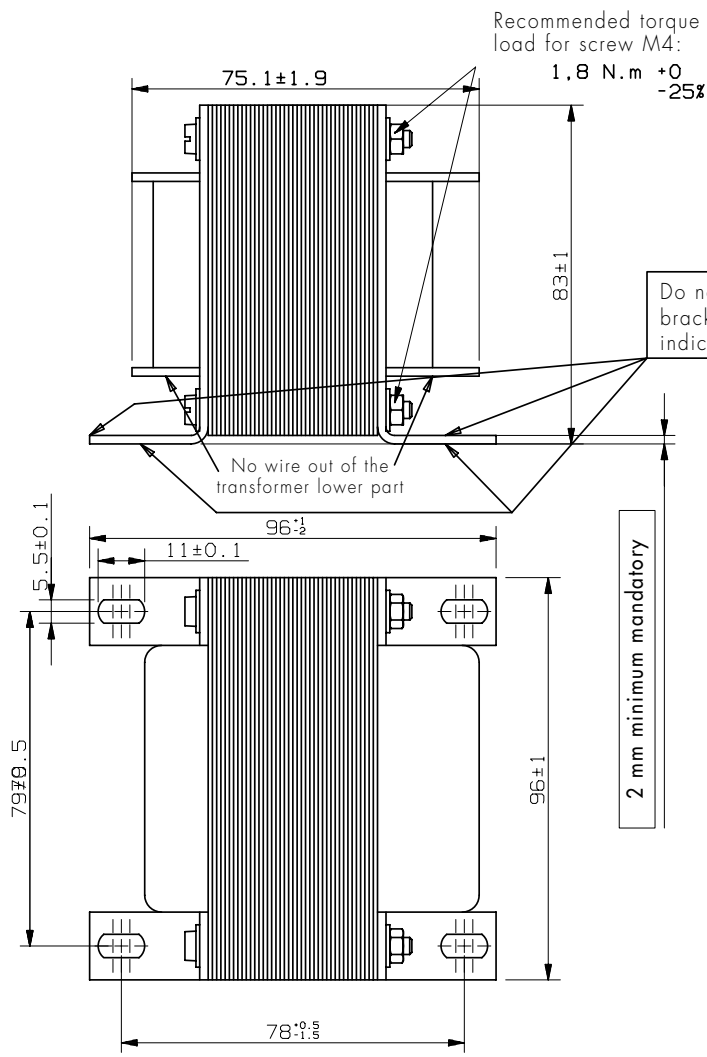


07	/ 95	.....	.....	
06	/ 95	.....	.....	
05	/ 95	.....	.....	
04	11/10/95	J10353	Mise a jour suivant reunion avec fournisseur	
03	21/06/95	J10340	modifie Ieff a vide max et precise epaisseur pattes de fixations	
02	30/04/95	J10325	Lancement	
0A	12/01/95	SAN6	Lancement/Proto	
Ind. rev.	Date appli.	Note appli.	Modification / modification	N°m appli.

Echelle scale -/- Project project 6JC08  
 Dossier folder 86D3  
 N° note application application memo n° J10353  
 DOCUMENT DE DEFINITION Date date 12/01/95  
 Etabli par issued by D. SENOVILLE  
**Telemecanique**  
**GRUPE SCHNEIDER**

DEMARREUR PROGRESSIF - SOFT STARTER  
 Taille 3 - size 3  
 TRANSFORMATOR  
 Date date 12/01/95 ATS46. AUTOTRA. 120VA. 50/60Hz. ....  
 RADICAL VU TVFI CD IED FOLIO  
149405901 A06 X 04 01/02  
 Date du tirage: 09/06/1998 C A D R A 8 Format A3

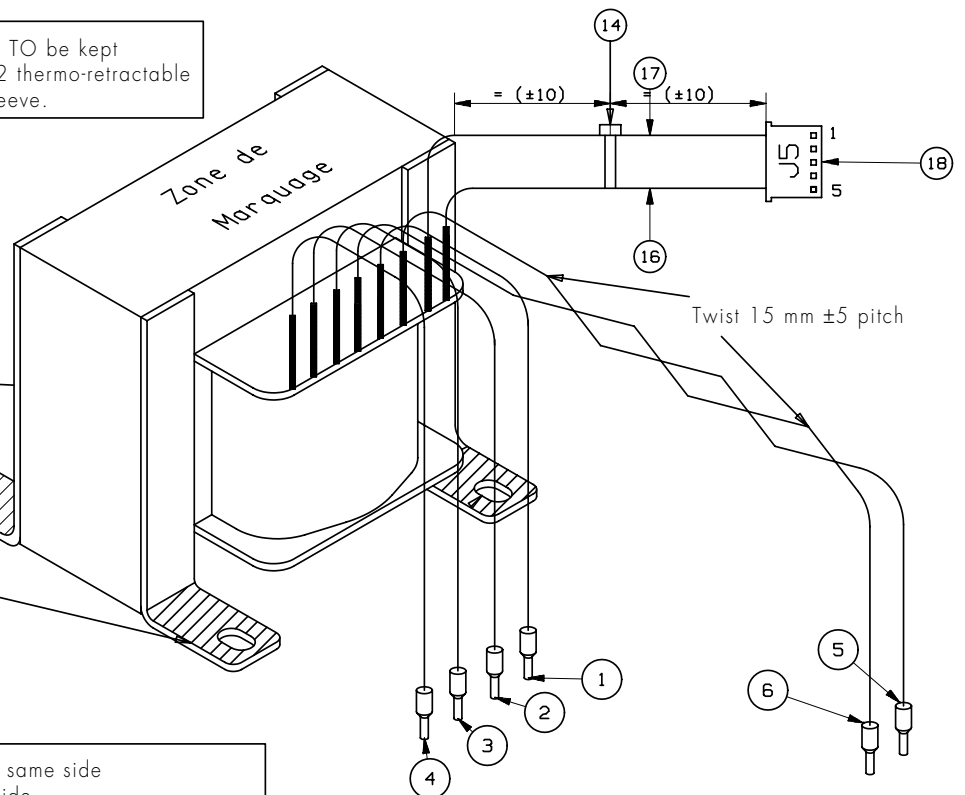
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The wires **HAVE TO** be kept with a 20 mm ± 2 thermo-retractable U.L. certified sleeve.

Do not soak attach brackets in the indicated areas.

Wires **HAVE TO** go out from the same side and towards transformer upper side.  
 Outlet order is not important.  
 Outlet wires **HAVE TO** be welded on the opposite side of the coiling wire.



**MECHANICAL SPECIFICATION:**

Attach brackets must resist to sinusoidal vibrations 0.3 G to 0.7 G 2\_200 Hz, during 1 hour, according to IEC 98-2-6 specification.

**CONNECTION ENGINEERING SPECIFICATION:**

Cables definition: slack wire 600V-105°C, AWG 22; U.L. style 1213.  
 Connection engineering instruction: IC 1010367

①	White wire mark 1: M2153019 Length 450mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑤	Black wire mark 5: M21513020 Length 500mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005
②	Green wire mark 2: M21513017 Length 450mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑥	Black wire mark 6: M21513020 Length 500mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005
③	Blue wire mark 3: M21513018 Length 450mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑭	1 Clip: DZ4DP1002
④	Red wire mark 4: M21513020 Length 450mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑯	2 Black wires marks 16 and 17: M21513022 Length 500mm ±10mm 2 socket contacts to be stacked : SY3CM0142
		⑰	
		⑱	5-point socket: SY3CM0216 marked J5

Echelle /- Project scale	6JC08	N° note application application memo n°	DEMARREUR PROGRESSIF - SOFT STARTER
Dossier Folder	86D3	J10353	Taille 3 - size 3 TRANSFORMATOR
DOCUMENT DE DEFINITION		Date date	.A.T.S.4.6. .A.U.T.O.T.R.A. .1.2.0.V.A. 5.0./6.0.H
 GROUPE SCHNEIDER		Etabli par Issued by	RADICAL VU IVFI CD IED FOLIO
		D. SENOVILLE	149405901 A06 X 04 02/02
			Date du tirage: 09/06/1998 C A D R A 8 Format A3

PARTS LIST SIZE 3

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940330112	A 11	J30688	01/07/98	<b>ATS46C17N PRODUCT ASSEMBLY</b>

DOCUMENT REFERENCE: 149403301A01 IED: 11

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 2.5 THICK	3.00000	15/12/96		203.
DZ4DZ1250	ADHESIVE FIXATION 19.5X19 H10	1.00000	15/12/96		204.
FJPN601FKNPTA	EQUIPPED WIRE	2.00000	15/12/96		
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500	15/12/96		118.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	15/12/96		90.
SY3AT0007	BIMETAL THERMOSTAT90CCONT.OR UL	1.00000	15/12/96		18.
REPLACES:	OLD: A884201				
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	11.00000	15/12/96		65.
SY3FA7000	CABLE GROMMET THICK 1.5 D6/10	2.00000	15/12/96		69.
REPLACES:	OLD: A880309				
SY3KB3000	B.J TOLE 1 V/V 4MM2 PAS8	4.00000	15/12/96		37.
REPLACES:	OLD: A881501				
SZ1MH0057	MODULE 2THY 250A 1400V	3.00000	15/12/96		11.
REPLACES:	OLD: J931202				
SZ1MH0063	MODULE 2THY 250A 1400V	3.00000	15/12/96		11.
REPLACES:	OLD: J934003				
V10RC2042	MEDIUM CS WASHER. 4-10, AC ZNC	11.00000	15/12/96		114.
V10RC2082	MEDIUM CS WASHER. 8-18, AC ZNC	12.00000	15/12/96		26.
V10RC2102	MEDIUM CS WASHER. 10-22,AC ZNC	1.00000	15/12/96		101.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	6.00000	15/12/96		63.
V1110410	SCREW H, M4-10, 6.8 ZNC	11.00000	15/12/96		113.
V1111025	SCREW H, M10-25, 6.8 ZNC	1.00000	15/12/96		100.
V1180816	SCREW C HC, M8-16, 8.8 ZNC	6.00000	15/12/96		72.
V1180820	SCREW C HC, M8-20, 8.8 ZNC	6.00000	15/12/96		27.
V1180830	SCREW C HC, M8-30, 8.8 ZNC	3.00000	15/12/96		104.
V12172003	SCREW CBL X ,ST 3,9-6,5, F,	4.00000	15/12/96		201.
REPLACES:	OLD: J952003				

V12183081	SCREW AF CBLXS 4,3-10 C,ZNC	14.00000	15/12/96	107.
REPLACES:	OLD: A900305			
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	15/12/96	19.
REPLACES:	OLD: A901302			
V12215008	NUT M5, WITH INCORP CS WASHER	4.00000	17/01/97	
V12215033	NUT M4, WITH INCORP CS WASHER	4.00000	15/12/96	15.
REPLACES:	OLD: J934602			
V12225005	TOOTHED CS WASHER 6, AC ZNC	6.00000	15/12/96	106.
V1320400	NUT H, M4, 6 ZNC	3.00000	15/12/96	112.
V1320600	NUT H, M6, 6 ZNC	16.00000	15/12/96	5.
V1320800	NUT H, M8, 6 ZNC	3.00000	15/12/96	28.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96	102.
V1630400	WASHER M, 4, AC ZNC	3.00000	15/12/96	115.
V1630810	WASHER M, 8, AC ZNC	12.00000	15/12/96	103.
V1631000	WASHER M, 10, AC ZNC	2.00000	15/12/96	105.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	16.00000	15/12/96	4.
W103850860311	EQUIPPED SCREW CHC M5-20	12.00000	15/12/96	12.
W103850870211	EQUIPPED SCREW + - M4-10	6.00000	15/12/96	8.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	17/01/97	116.
W114940010111	ATS46 T3 CONTROL SUPPORT	1.00000	15/12/96	30.
W114940020111	ATS46 T3 BARS SUPPORT	1.00000	15/12/96	51.
W114940030111	ATS46 TOP COVER T3	1.00000	15/12/96	60.
W114940040111	ATS46 BOTTOM COVER T3	1.00000	15/12/96	61.
W114940050111	ATS46 LEFT + RIGHT SIDES	1.00000	15/12/96	53.
W114940060111	ATS FAN/DISSIPATOR SUPPORT	1.00000	15/12/96	7.
W203699560112	ATS23C24 INPUT BAR	3.00000	15/12/96	24.
W203699570112	ATS23C24 MOTOR COUPLING BAR	3.00000	15/12/96	21.
W203699580121	ATS23 C24 INTERCONNECTION	3.00000	15/12/96	22.
W203699590121	ATS23C24 DIRECT COUPLING BAR	3.00000	15/12/96	23.
W314940760111	ATS46 DISSIPATOR C17/21/25	3.00000	15/12/96	2.
W403699620111	INSULATOR	9.00000	15/12/96	36.
REPLACES:	OLD: W103699620111			
W413642170111	ATS/RTV/STV.STICKERS SET FOR BARS	1.00000	15/12/96	42.
W414940500112	LABEL ALTISTART 46 T3	1.00000	01/03/98	64.

W414940510111	PRODUCT LABEL ATS46C17N	1.00000	15/12/96	67.
W803699530111	INTENSITY TRANSFORMER *	2.00000	15/12/96	17.
W803699660111	SCREEN PRINT LABEL C	1.00000	15/12/96	38.
W803699660211	SCREEN PRINT LABEL 230V	1.00000	15/12/96	39.
W803699660311	SCREEN PRINT LABEL 400V	1.00000	15/12/96	40.
W803699660411	SCREEN PRINT LABEL 460/500V	1.00000	15/12/96	121.
W803834000111	SUB ASSY T1 CABLE BUNDLE *	2.00000	15/12/96	75.
W803834010211	SUB ASSY VIGITHERM CABLE BUNDLE *	1.00000	15/12/96	76.
W803857560111	JC08 SIZE3 C17 MEASUR PWB	1.00000	15/12/96	57.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	111.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	01/07/98	59.
W814940100111	SUB ASSY FAN FINISHED	1.00000	15/12/96	7.
W814940590112	SELFTRANSFO. 120VA 225-390/475V	1.00000	01/07/98	32.
W814940840111	MODULE CABLE BUNDLE C17/21/25/32	1.00000	15/12/96	133.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	70.
W914941150111	MARKING LABEL.34X15 MM	1.00000	15/12/96	3.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	99.

FIN D EXPLOSION



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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W814940330212            A 12                                    J30688                    01/07/98                    **ATS46C21N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403302A01                    IED: 12

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 2.5 THICK	3.00000	15/12/96		203.
DZ4DZ1250	ADHESIVE FIXATION 19.5X19 H10	1.00000	15/12/96		204.
FJPN601FKNPTA	EQUIPPED WIRE	2.00000	15/12/96		
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500	15/12/96		118.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	15/12/96		90.
SY3AT0007	BIMETAL THERMOSTAT 90CCONT.OR UL	1.00000	15/12/96		18.
REPLACES:	OLD: A884201				
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	9.00000	15/12/96		65.
SY3FA7000	CABLE GROMMET THICK 1.5 D6/10	2.00000	15/12/96		69.
REPLACES:	OLD: A880309				
SY3KB3000	B.J TOLE 1 V/V 4MM2 PAS8	4.00000	15/12/96		37.
REPLACES:	OLD: A881501				
SZ1MH0057	MODULE 2THY 250A 1400V	3.00000	15/12/96		11.
REPLACES:	OLD: J931202				
SZ1MH0063	MODULE 2THY 250A 1400V	3.00000	15/12/96		11.
REPLACES:	OLD: J934003				
V10RC2042	MEDIUM CS WASHER. 4-10, AC ZNC	11.00000	15/12/96		114.
V10RC2082	MEDIUM CS WASHER. 8-18, AC ZNC	12.00000	15/12/96		26.
V10RC2102	MEDIUM CS WASHER. 10-22,AC ZNC	1.00000	15/12/96		101.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	6.00000	15/12/96		63.
V1110410	SCREW H, M4-10, 6.8 ZNC	11.00000	15/12/96		113.
V1111025	SCREW H, M10-25, 6.8 ZNC	1.00000	15/12/96		100.
V1180816	SCREW C HC, M8-16, 8.8 ZNC	6.00000	15/12/96		72.
V1180820	SCREW C HC, M8-20, 8.8 ZNC	6.00000	15/12/96		27.
V1180830	SCREW C HC, M8-30, 8.8 ZNC	3.00000	15/12/96		104.
V12172003	SCREW CBL X ,ST 3,9-6,5, F,	4.00000	15/12/96		201.
REPLACES:	OLD: J952003				

V12183081	SCREW AF CBLXS 4,3-10 C,ZNC	14.00000	15/12/96	107.
REPLACES:	OLD: A900305			
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	15/12/96	19.
REPLACES:	OLD: A901302			
V12215008	NUT M5,A WITH INCORP. CS WASHER	4.00000	17/01/97	
V12215033	NUT M4,A WITH INCORP. CS WASHER	4.00000	15/12/96	15.
REPLACES:	OLD: J934602			
V12225005	TOOTHED CS WASHER 6, AC ZNC	6.00000	15/12/96	106.
V1320400	NUT H, M4, 6 ZNC	3.00000	15/12/96	112.
V1320600	NUT H, M6, 6 ZNC	16.00000	15/12/96	5.
V1320800	NUT H, M8, 6 ZNC	3.00000	15/12/96	28.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96	102.
V1630400	WASHER M, 4, AC ZNC	3.00000	15/12/96	115.
V1630810	WASHER M, 8, AC ZNC	12.00000	15/12/96	103.
V1631000	WASHER M, 10, AC ZNC	2.00000	15/12/96	105.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	16.00000	15/12/96	4.
W103850860311	EQUIPPED SCREW CHC M5-20	12.00000	15/12/96	12.
W103850870211	EQUIPPED SCREW + - M4-10	6.00000	15/12/96	8.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	17/01/97	116.
W114940010111	ATS46 T3 CONTROL SUPPORT	1.00000	15/12/96	30.
W114940020111	ATS46 T3 BARS SUPPORT	1.00000	15/12/96	51.
W114940030111	ATS46 TOP COVER T3	1.00000	15/12/96	60.
W114940040111	ATS46 BOTTOM COVER T3	1.00000	15/12/96	61.
W114940050111	ATS46 LEFT + RIGHT SIDES	1.00000	15/12/96	53.
W114940060111	ATS FAN/DISSIPATOR SUPPORT	1.00000	15/12/96	7.
W203699560112	ATS23C24 BARRE D'ARRIVEE	3.00000	15/12/96	24.
W203699570112	ATS23C24 MOTOR COUPLING BAR	3.00000	15/12/96	21.
W203699580121	ATS23 C24 INTERCONNECTION	3.00000	15/12/96	22.
W203699590121	ATS23C24 DIRECT COUPLING BAR	3.00000	15/12/96	23.
W314940760111	ATS46 DISSIPATOR C17/21/25	3.00000	15/12/96	2.
W403699620111	INSULATOR	9.00000	15/12/96	36.
REPLACES:	OLD: W103699620111			
W413642170111	ATS/RTV/STV STICKERS SET FOR BARS	1.00000	15/12/96	42.
W414940500112	LABEL ALTISTART 46 T3	1.00000	01/03/98	64.

W414940510211	PRODUCT LABEL ATS46C21N	1.00000	15/12/96	67.
W803699530111	TRANSFO. D'INTENSITE *	2.00000	15/12/96	17.
W803699660111	SCREEN PRINT LABEL C	1.00000	15/12/96	38.
W803699660211	SCREEN PRINT LABEL 230V	1.00000	15/12/96	39.
W803699660311	SCREEN PRINT LABEL 400V	1.00000	15/12/96	40.
W803699660411	SCREEN PRINT LABEL 460/500V	1.00000	15/12/96	121.
W803834000111	SUB ASSY T1 CABLE BUNDLE *	2.00000	15/12/96	75.
W803834010211	SUB ASSY VIGITHERM CABLE BUNDLE *	1.00000	15/12/96	76.
W803857560211	JC08 SIZE3 C21 MEASUR PWB	1.00000	15/12/96	57.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	111.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	01/07/98	59.
W814940100111	SUB ASSY FAN FINISHED	1.00000	15/12/96	7.
W814940590112	SELFTRANSFO. 120VA 225-390/475V	1.00000	01/07/98	32.
W814940840111	MODULE CABLE BUNDLE C17/21/25/32	1.00000	15/12/96	133.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	70.
W914941150111	MARKING LABEL.34X15 MM	1.00000	15/12/96	3.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	99.
FIN D EXPLOSION				

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W814940330312            A 11                                    J30688                    01/07/98                    **ATS46C25N PRODUCT ASSEMBLY**  
DOCUMENT REFERENCE: 149403303A01                                    IED: 11

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 2.5 THICK	3.00000	15/12/96		203.
DZ4DZ1250	ADHESIVE FIXATION 19.5X19 H10	1.00000	15/12/96		204.
FJPN601FKNPTA	EQUIPPED WIRE	2.00000	15/12/96		
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500	15/12/96		118.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	15/12/96		90.
SY3AT0007	BIMETAL THERMOSTAT 90CCONT.OR UL	1.00000	15/12/96		18.
REPLACES:	OLD: A884201				
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	9.00000	15/12/96		65.
SY3FA7000	CABLE GROMMET THICK 1.5 D6/10	2.00000	15/12/96		69.
REPLACES:	OLD: A880309				
SY3KB3000	B.J TOLE 1 V/V 4MM2 PAS8	4.00000	15/12/96		37.
REPLACES:	OLD: A881501				
SZ1MH0057	MODULE 2THY 250A 1400V	3.00000	15/12/96		11.
REPLACES:	OLD: J931202				
SZ1MH0063	MODULE 2THY 250A 1400V	3.00000	15/12/96		11.
REPLACES:	OLD: J934003				
V10RC2042	MEDIUM CS WASHER. 4-10, AC ZNC	11.00000	15/12/96		114.
V10RC2082	MEDIUM CS WASHER. 8-18, AC ZNC	12.00000	15/12/96		26.
V10RC2102	MEDIUM CS WASHER. 10-22,AC ZNC	1.00000	15/12/96		101.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	6.00000	15/12/96		63.
V1110410	SCREW H, M4-10, 6.8 ZNC	11.00000	15/12/96		113.
V1111025	SCREW H, M10-25, 6.8 ZNC	1.00000	15/12/96		100.
V1180816	SCREW C HC, M8-16, 8.8 ZNC	6.00000	15/12/96		72.
V1180820	SCREW C HC, M8-20, 8.8 ZNC	6.00000	15/12/96		27.
V1180830	SCREW C HC, M8-30, 8.8 ZNC	3.00000	15/12/96		104.
V12172003	SCREW CBL X ,ST 3,9-6,5, F,	6.00000	15/12/96		201.
REPLACES:	OLD: J952003				

V12183081	SCREW AF CBLXS 4,3-10 C,ZNC	14.00000	15/12/96	107.
REPLACES:	OLD: A900305			
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	15/12/96	19.
REPLACES:	OLD: A901302			
V12215008	NUT M5,A WITH INCORP. CS WASHER	4.00000	17/01/97	
V12215033	NUT M4,A WITH INCORP. CS WASHER	4.00000	15/12/96	15.
REPLACES:	OLD: J934602			
V12225005	TOOTHED CS WASHER 6, AC ZNC	6.00000	15/12/96	106.
V1320400	NUT H, M4, 6 ZNC	3.00000	15/12/96	112.
V1320600	NUT H, M6, 6 ZNC	16.00000	15/12/96	5.
V1320800	NUT H, M8, 6 ZNC	3.00000	15/12/96	28.
V1321000	NUTOU H, M10, 6 ZNC	1.00000	15/12/96	102.
V1630400	WASHER M, 4, AC ZNC	3.00000	15/12/96	115.
V1630810	WASHER M, 8, AC ZNC	12.00000	15/12/96	103.
V1631000	WASHER M, 10, AC ZNC	2.00000	15/12/96	105.
W10274587	SHAKE PROOF WASHER SCREW AF1VA612	16.00000	15/12/96	4.
W103850860311	EQUIPPED SCREW CHC M5-20	12.00000	15/12/96	12.
W103850870211	EQUIPPED SCREW + - M4-10	6.00000	15/12/96	8.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	17/01/97	116.
W114940010111	ATS46 T3 CONTROL SUPPORT	1.00000	15/12/96	30.
W114940020111	ATS46 T3 BARS SUPPORT	1.00000	15/12/96	51.
W114940030111	ATS46 TOP COVER T3	1.00000	15/12/96	60.
W114940040111	ATS46 BOTTOM COVER T3	1.00000	15/12/96	61.
W114940050111	ATS46 LEFT + RIGHT SIDES	1.00000	15/12/96	53.
W114940060111	ATS FAN/DISSIPATOR SUPPORT	1.00000	15/12/96	7.
W203699560112	ATS23C24 INPUT BAR	3.00000	15/12/96	24.
W203699570112	ATS23C24 MOTOR COUPLING BAR	3.00000	15/12/96	21.
W203699580121	ATS23 C24 INTERCONNECTION	3.00000	15/12/96	22.
W203699590121	ATS23C24 DIRECT COUPLING BAR	3.00000	15/12/96	23.
W314940760111	ATS46 DISSIPATOR C17/21/25	3.00000	15/12/96	2.
W403699620111	INSULATOR	9.00000	15/12/96	36.
REPLACES:	OLD: W103699620111			
W413642170111	ATS/RTV/STV.STICKERS SET FOR BARS	1.00000	15/12/96	42.
W414940500112	LABEL ALTISTART 46 T3	1.00000	01/03/98	64.

W414940510311	PRODUCT LABEL ATS46C25N	1.00000	15/12/96	67.
W803699530111	INTENSITY TRANSFORMER *	2.00000	15/12/96	17.
W803699660111	SCREEN PRINT LABEL C	1.00000	15/12/96	38.
W803699660211	SCREEN PRINT LABEL 230V	1.00000	15/12/96	39.
W803699660311	SCREEN PRINT LABEL 400V	1.00000	15/12/96	40.
W803699660411	SCREEN PRINT LABEL 460/500V	1.00000	15/12/96	121.
W803834000111	SUB ASSY T1 CABLE BUNDLE *	2.00000	15/12/96	75.
W803834010211	SUB ASSY VIGITHERM CABLE BUNDLE *	1.00000	15/12/96	76.
W803857560311	JC08 SIZE3 C25 MEASUR PWB	1.00000	15/12/96	57.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	111.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	01/07/98	59.
W814940100111	SUB ASSY FAN FINISHED	1.00000	15/12/96	7.
W814940590112	SELFTRANSFO. 120VA 225-390/475V	1.00000	01/07/98	32.
W814940840111	MODULE CABLE BUNDLE C17/21/25/32	1.00000	15/12/96	133.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	70.
W914941150111	MARKING LABEL.34X15 MM	1.00000	15/12/96	3.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	99.
FIN D EXPLOSION				

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W814940330412            A 11                                    J30688                    01/07/98                    **ATS46C32N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403304A01                    IED: 11

\*\*\*\*\*

COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 2.5 THICK	3.00000	15/12/96		203.
DZ4DZ1250	ADHESIVE FIXATION 19.5X19 H10	1.00000	15/12/96		204.
FJPN601FKNPTA	EQUIPPED WIRE	2.00000	15/12/96		
M90400350	FLUOR. LUBRICANT ALCOA EJC N°2	0.01500	15/12/96		118.
SY3AT0006	BIMETAL THERMOSTAT F50 BRID UL	1.00000	15/12/96		90.
SY3AT0007	BIMETAL THERMOSTAT 90CCONT.OR UL	1.00000	15/12/96		18.
REPLACES:	OLD: A884201				
SY3CE018	TAB 6.3X0.8 30 TO SCREW D4	11.00000	15/12/96		65.
SY3FA7000	CABLE GROMMET THICK 1.5 D6/10	2.00000	15/12/96		69.
REPLACES:	OLD: A880309				
SY3KB3000	B.J TOLE 1 V/V 4MM2 PAS8	4.00000	15/12/96		37.
REPLACES:	OLD: A881501				
SZ1MH0503	MODULE 1 THYR 400A 1400V	6.00000	15/12/96		11.
REPLACES:	OLD: J931205				
V10RC2042	MEDIUM CS WASHER. 4-10, AC ZNC	11.00000	15/12/96		114.
V10RC2102	MEDIUM CS WASHER. 10-22,AC ZNC	13.00000	15/12/96		101.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	6.00000	15/12/96		63.
V1110410	SCREW H, M4-10, 6.8 ZNC	11.00000	15/12/96		113.
V1111025	SCREW H, M10-25, 6.8 ZNC	7.00000	15/12/96		100.
V1111035	SCREW H, M10-35, 6.8 ZNC	6.00000	15/12/96		202.
V12172003	SCREW CBL X ,ST 3,9-6,5, F,	4.00000	15/12/96		102.
REPLACES:	OLD: J952003				
V12183081	SCREW AF CBLXS 4,3-10 C,ZNC	14.00000	15/12/96		107.
REPLACES:	OLD: A900305				
V12183087	SCREW AF CBLXS 3,3- 8, ZNC	4.00000	15/12/96		19.
REPLACES:	OLD: A901302				
V12215008	NUT M5,A WITH INCORP CS WASHER	4.00000	17/01/97		

V12215033	NUT M4,A WITH INCORP CS WASHER	4.00000	15/12/96	15.
REPLACES:	OLD: J934602			
V12225005	THOOTHED CS WASHER 6, AC ZNC	6.00000	15/12/96	106.
V1320400	NUT H, M4, 6 ZNC	3.00000	15/12/96	112.
V1320600	NUT H, M6, 6 ZNC	16.00000	15/12/96	5.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96	102.
V1630400	WASHER M, 4, AC ZNC	3.00000	15/12/96	115.
V1631000	WASHER M, 10, AC ZNC	14.00000	15/12/96	105.
W10274587	SHAKE PROOF WASHER SCREW AF1VA612	16.00000	15/12/96	4.
W103850860311	EQUIPPED SCREW CHC M5-20	24.00000	15/12/96	12.
W103850870211	EQUIPPED SCREW + - M4-10	6.00000	15/12/96	8.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	17/01/97	116.
W114940010111	ATS46 T3 CONTROL SUPPORT	1.00000	15/12/96	30.
W114940020111	ATS46 T3 BARS SUPPORT	1.00000	15/12/96	51.
W114940030111	ATS46 TOP COVER T3	1.00000	15/12/96	60.
W114940040111	ATS46 BOTTOM COVER T3	1.00000	15/12/96	61.
W114940050111	ATS46 LEFT + RIGHT SIDES	1.00000	15/12/96	53.
W114940060111	ATS FAN/DISSIPATOR SUPPORT	1.00000	15/12/96	7.
W203846040112	ATS23 C30 CONNECTION L&A	6.00000	15/12/96	21.
W203846050112	ATS23 C30 CONNECTION T	3.00000	15/12/96	22.
W203846060111	MODULES LINKING BAR	6.00000	15/12/96	23.
W203846070111	COMPENSATION WASHER	3.00000	15/12/96	24.
W314940770111	ATS46 DISSIPATOR C32	3.00000	15/12/96	2.
W403699620111	INSULATOR	9.00000	15/12/96	36.
REPLACES:	OLD: W103699620111			
W413642170111	ATS/RTV/STV.STICKERS SET FOR BARS	1.00000	15/12/96	42.
W414940500112	LABEL ALTISTART 46 T3	1.00000	01/03/98	64.
W414940510411	PRODUCT LABEL ATS46C32N	1.00000	15/12/96	67.
W803699530111	INTENSITY TRANSFORMER *	2.00000	15/12/96	17.
W803699660111	SCREEN PRINT LABEL C	1.00000	15/12/96	38.
W803699660211	SCREEN PRINT LABEL 230V	1.00000	15/12/96	39.
W803699660311	SCREEN PRINT LABEL 400V	1.00000	15/12/96	40.
W803699660411	SCREEN PRINT LABEL 460/500V	1.00000	15/12/96	121.
W803834000111	SUB ASSY T1 CABLE BUNDLE *	2.00000	15/12/96	75.



W803834010211	SUB ASSY VIGITHERM CABLE BUNDLE *	1.00000	15/12/96	76.
W803857560411	JC08 SIZE3 C32 MEASUR PWB	1.00000	15/12/96	57.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	111.
W813819490114	SUB ASSY CONTROL BLOC FINISHED	1.00000	01/07/98	59.
W814940100111	SUB ASSY FAN FINISHED	1.00000	15/12/96	7.
W814940590112	SELFTRANSFO. 120VA 225-390/475V	1.00000	01/07/98	32.
W814940840111	MODULE CABLE BUNDLE C17/21/25/32	1.00000	15/12/96	133.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	70.
W914941150111	MARKING LABEL.34X15 MM	1.00000	15/12/96	3.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	99.
FIN D EXPLOSION				

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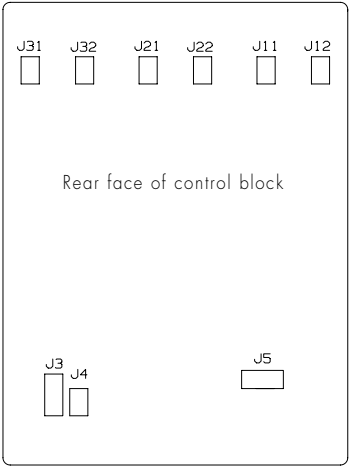
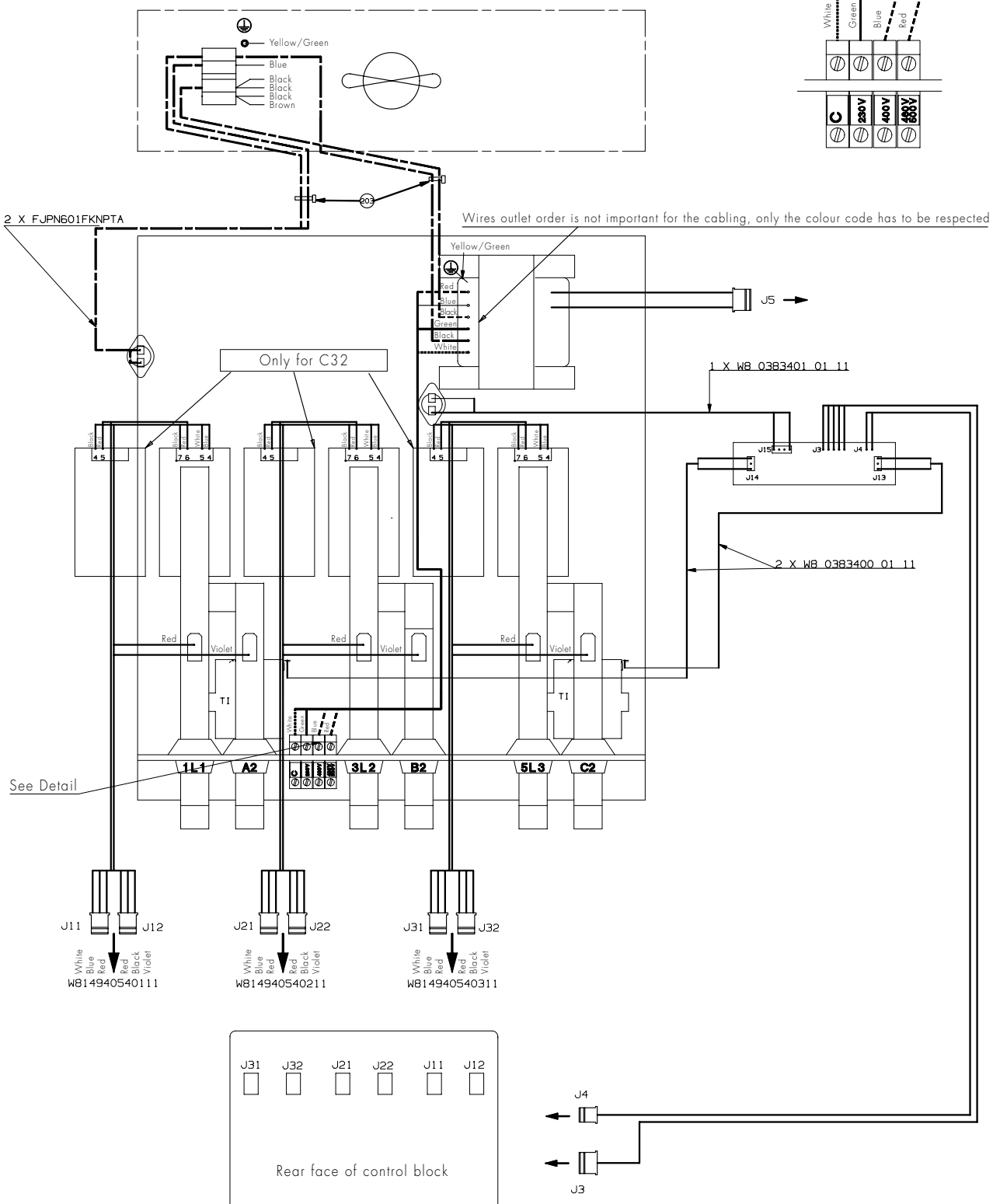
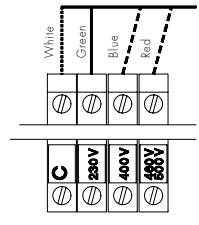
SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814941020511	A 05	J30333	18/04/97	<b>KIT PACK WIRING T3</b>
DOCUMENT REFERENCE:	149410205A01	IED: 06		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M93731035	TRANSPARENT PE SLEEVE E90M L240	0.01500	19/03/96		4.
REPLACES:	OLD: J940702				
VD0C32Q301	GE ATS 46	1.00000	04/11/96		14.
W808780210111	M10 BOLTS PACK	5.00000	19/03/96		7.
W813819520111	TIME RELAY OUTPUT CONNECTION	1.00000	19/03/96		1.
W813819530111	CONN.CONT TAMPOGRAPHIE	1.00000	19/03/96		2.
W914941150111	MARKING LABEL 34X15 MM	1.00000	18/04/97		3.
FIN D EXPLOSION					

## INTERCONNECTION LAYOUT

DETAIL



N° de note	Date emission	Emetteur	IED	Modification	Parametre VJ
J10308	15/04/96	R.PICHEREAU	01	Lancement des nomenclatures	
J10329	15/05/96	R.PICHEREAU	02	Lancement des plans	
J10337	12/07/96	R.PICHEREAU	03	ajoute version C32	
J10356	30/10/96	R.PICHEREAU	04	Ajoute texte sur ordre des fils du transfo et repere collier	

Tolerances generales : . . . . .  
 Traitement thermique : . . . . .  
 Revetement de surface : . . . . .  
 Matiere : . . . . .

Calcul fonctionnelle : OUI  NON  Instruction de controle : OUI  NON  Specification

Echelle 1 : 2 **DEWARREUR PROGRESSIF**

Etabli 15/04/96 R.PICHEREAU

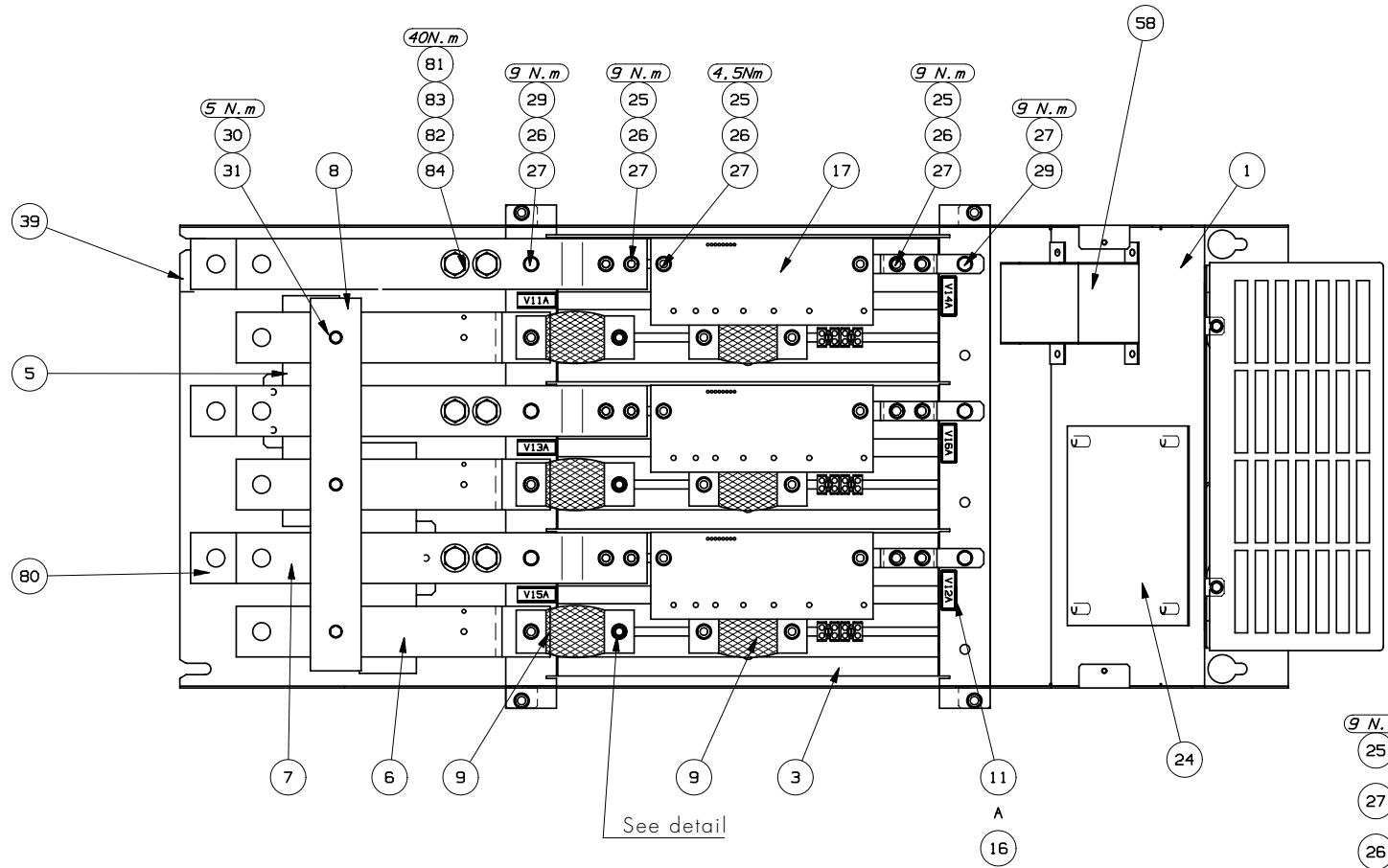
Note appl. 30/10/96 n° J10356

Projet 6J008 RADICAL VU VFI CD IED FOLIO  
 Dossier 8883

**Telemecanique**

Format A2 149403301A42X04 1/1

ASSEMBLY SIZE 4



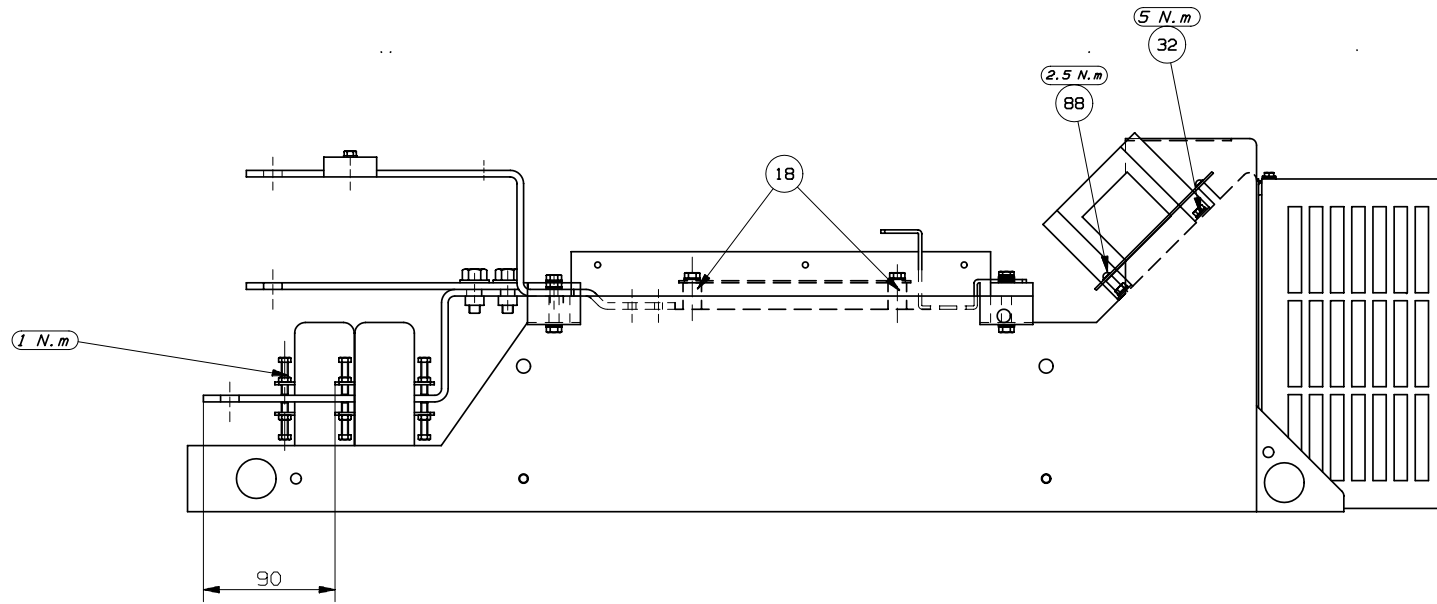
See detail

Double in C29/C66 see nomenclatures

Alcoa EJC N°2 lubricant

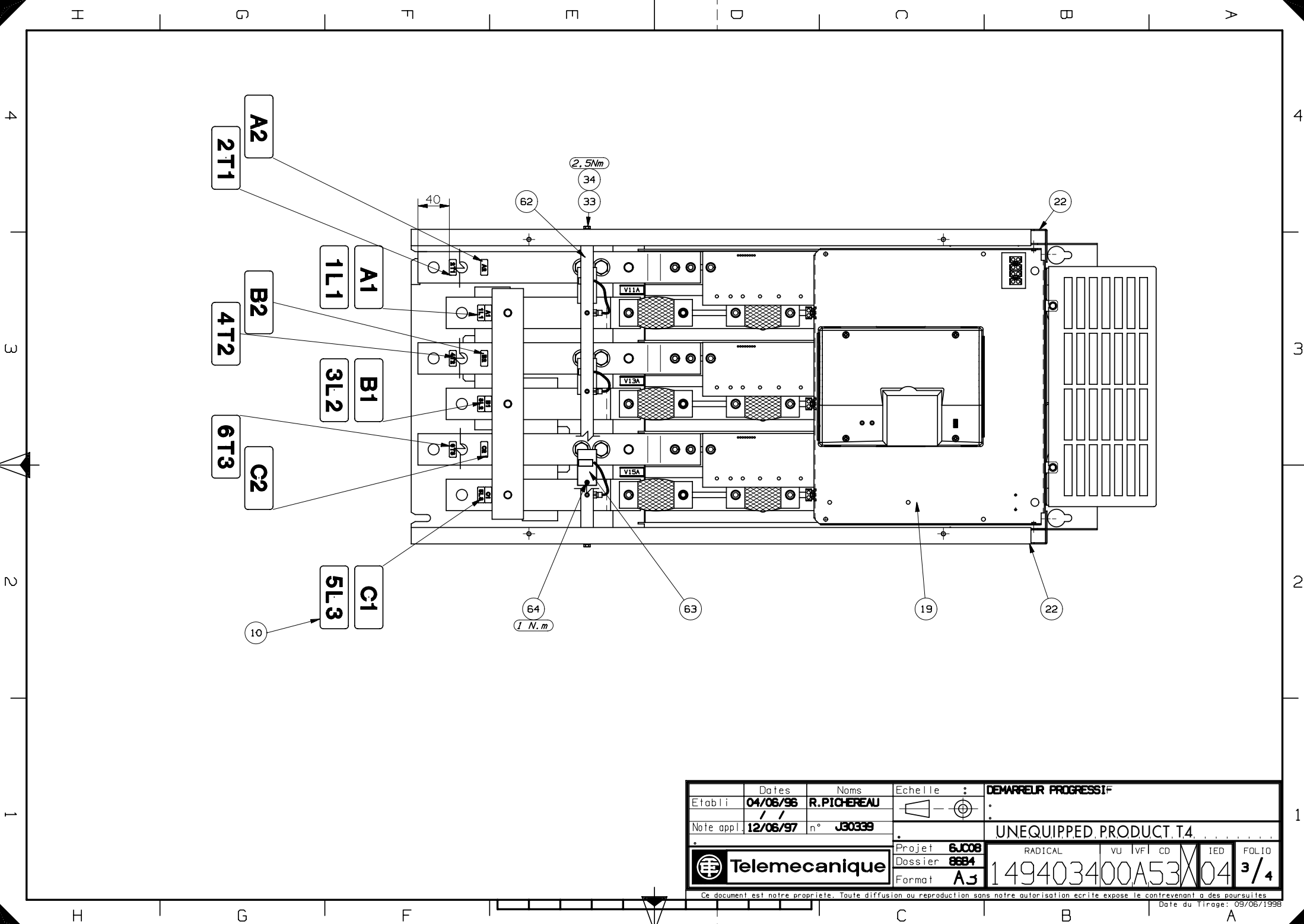
N°de note	Date emission	Emetteur	Modification	Parametre WJ
J10308	12/04/96	R.PICHEREAU	01 Lancement des nomenclatures	
J10330	17/06/96	R.PICHEREAU	02 DIFFUSION DES PLANS	
J10349	16/09/96	R.PICHEREAU	03 Change orientation transformateur/ajoute repere 200	
J30339	12/06/97	D.SENOVILLE	04 Suppression repere 200.	
.	/ / .	.	05 .	
.	/ / .	.	06 .	
.	/ / .	.	.	
.	/ / .	.	.	

Etabli	Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
	04/06/96	R.PICHEREAU		
Note appl.	/ /	N A		
	12/06/97	n° J30339		
Projet				6JC08
Dossier				8884
Format				A3
UNEQUIPPED PRODUCT T4				
RADICAL		VU	VF	CD
149403400A53		X	IED	FOLIO
				1/4



Etabli	Dates	Noms	Echelle	:	DEMARREUR PROGRESSIF					
	04/06/96	R. PICHEREAU		:						
Note appl.	/ /	N A								
	12/06/97	n° J30339	UNEQUIPPED PRODUCT T.4							
			Projet	6JC08	RADICAL	VU	IVFI	CD	IED	FOLIO
			Dossier	8884	149403400A53X04			2/4		
			Format	A3						

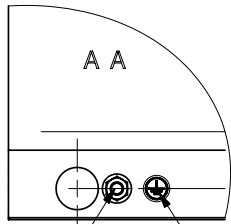
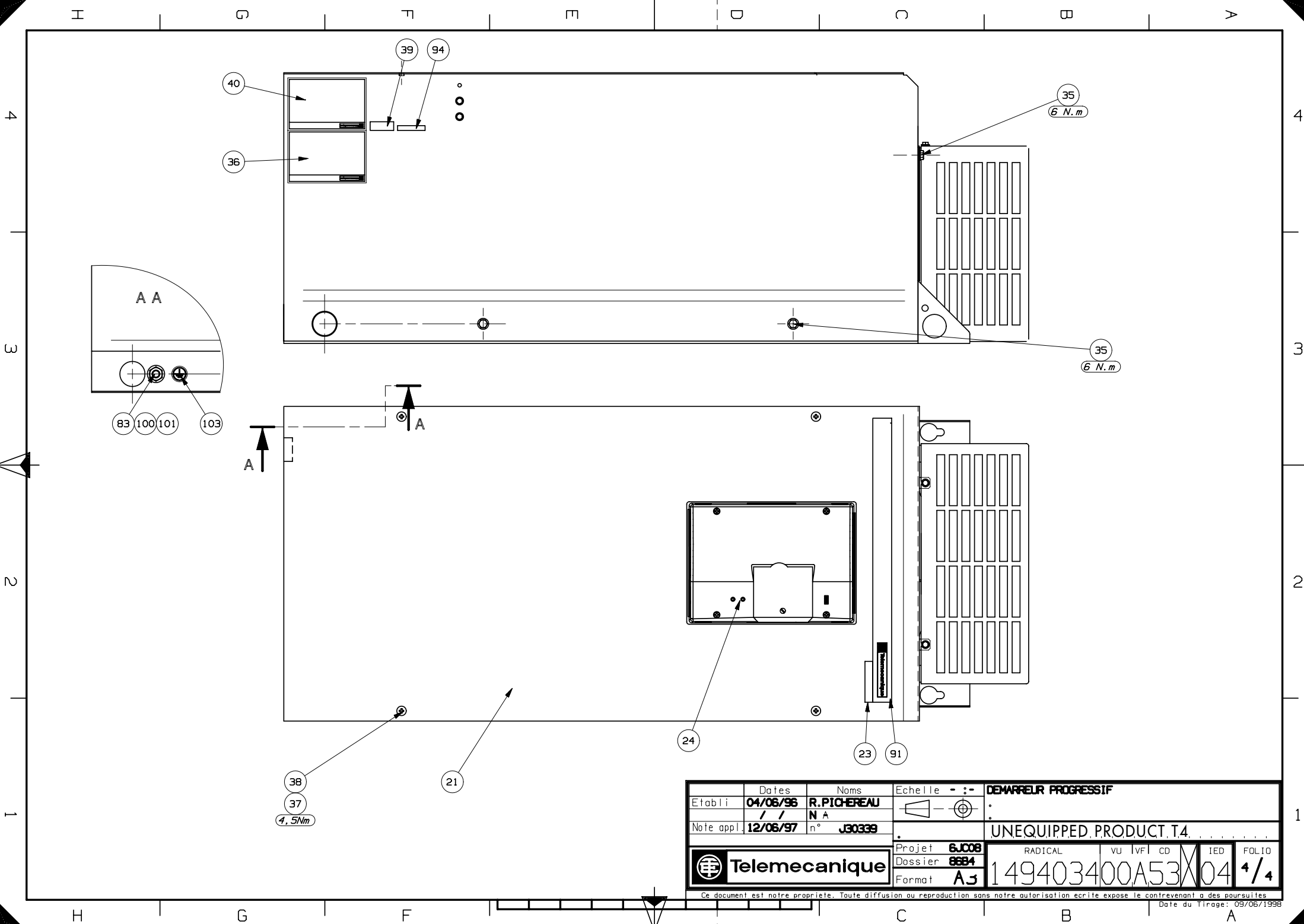
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Date du Tirage: 09/06/1998



Etabli	Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
	04/06/96	R. PIGHEREAU		
Note appl.	12/06/97	n° J30339		
<b>Telemecanique</b>			Projet	6JC08
			Dossier	6684
			Format	A3
UNEQUIPPED PRODUCT T4				
		RADICAL	VU VFI CD	IED FOLIO
		149403400A53	X04	3/4

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Date du Tirage: 03/06/1998

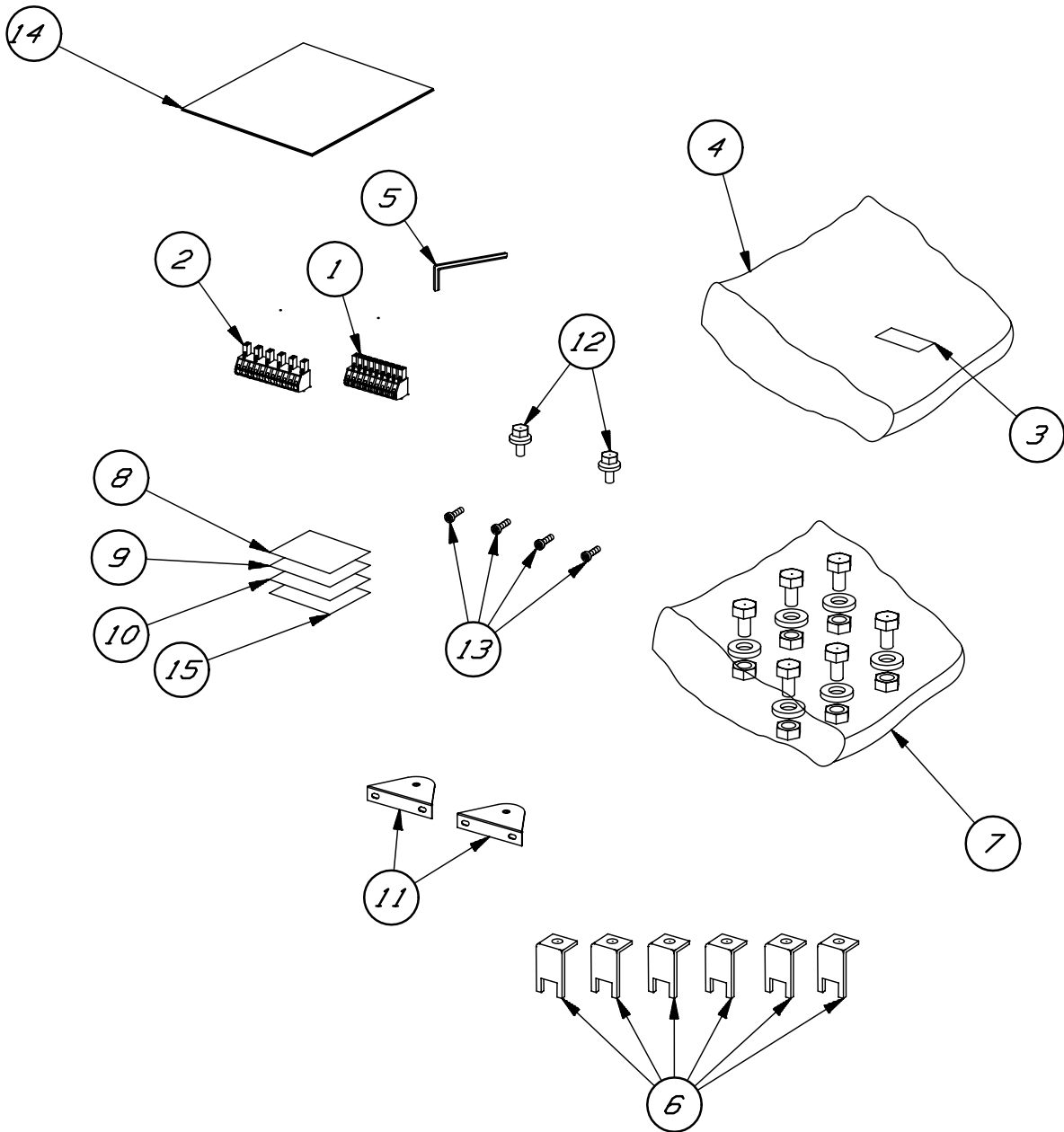




Etabli		Dates	Noms	Echelle	DEMARREUR PROGRESSIF
/ /		04/06/96	R. PIGEREAU	1:1	
Note appl.		12/06/97	n° J30339		UNEQUIPPED PRODUCT T4
Projet		6JC08			RADICAL VU IVFI CD IED FOLIO
Dossier		6684			149403400A53X04 4/4
Format		A3			

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Date du Tirage: 09/06/1998

4



SYMBOLE ARTICLE					
N° de note	Date emission	Emetteur	IED	Modification	Parametre VU
J10308	12/04/96	R.PICHEREAU	01	Lancement des nomenclatures	
J10327	10/06/96	R.PICHEREAU	02	diffusion du plan	
J10356	31/10/96	R.PICHEREAU	03	ajoute guide d'exploitation	
J10368	31/11/96	R.PICHEREAU	04	ajoute etiquette rep 15	
.	. / / .	.	.	.	.
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Dates		Noms		Echelle : 1	
Etabli	04/06/96	R.PICHEREAU		DEMARREUR PROGRESSIF	
	/ /	NA			
Note appl.	31/11/96	n° J10368		KIT PACK WIRING	
Projet		6JC08		RADICAL	
Dossier		88C2		VU   VF   CD	
Format		A1		IED FOLIO	
Telemecanique		149410200A53		04 1/1	

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Date du Tirage: 08/07/1998

D

I

C

B

I

A

**1 - RANGE OF IMPLEMENTATION**

These transformers are designed to be used on 50-60 Hz network.  
They follow the specification NF C 52-200 = Rated power ≤ 16 kVA; rated frequency ≤ 500 Hz; rated voltage ≤ 1100 V.

**2 - INSTALLATION AND ASSEMBLY CONDITIONS**

Ambient temperature.

- Running (if >40°C)  °C  
- Storage (if >40°C)  °C

Installation altitude  
(if >1 000 m)  m

**3 - ELECTRIC CHARACTERISTICS**

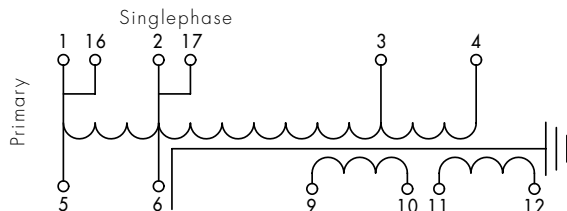
Rated power  VA  
Rated frequency  Hz

Singlephase transformer   
triphasé

**3.1 Servicing**

Continuous servicing  S1   
Temporary servicing  S2  : if yes, running duration  mn  
Periodic intermittent servicing  S3  : if yes, cycle  mn run coefficient  %

**3.2 Connection diagram**



**3.3 Primary winding.**

Reference	1 - 2	1 - 3	1 - 4
Rated eff. volt. (V)	225 V ± 17%	390 V ± 17%	475 V ± 17%
Rated eff. intensity (I) at max vacuum	45mA		

**3.4 Secondary winding**

Reference	5 - 6 (*)	16 - 17 (*)	9 - 10	11 - 12
Rated eff. volt. (V) (1)	225 V ± 5%	225 V ± 5%	22.5 to 23.5 V	21.5 to 22.5 V
Rated eff. intensity (I)	1 A	0.1 A	0.75 A	0.1 A
Rated eff. volt. (V) (2) at max vacuum	250 V	250 V	28 V	27 V

(\*) Self-transformer running on connections marked 5, 6, 16 and 17  
(1) With rated primary voltage and rated secondary intensity. (on each secondary wiring)  
(2) With rated primary voltage

**3.5 Earth connection test voltage**

This tension is alternatively applied between each wiring and the other ones connected to the transformer earth.  
If the conditions are different, they have to be specified in chapter 7: particular conditions.  
Value kept for the test voltage

**4 - MANUFACTURING CHARACTERISTICS**

4.1 Insulator limit temperature  °C Class   
4.2 Protection degree IP000  IP103   
4.3 Cooling mode (to be specified by the manufacturer)  
Dry transformer  Soaked transformer  Coil  Coated transformer   
Circuit   
4.4 Processing  
Execution II according to guide UTE C63-100

**5 - MARKING**

It will be strictly obliged to include:  
- Industrial symbol.  
- Manufacturer name or logo.  
- Code date

**W814940600111xx**  
↑  
Item identification

**6 - PACKING**

Expanded polystyrene is not allowed.

**7 - PARTICULAR CONDITIONS**

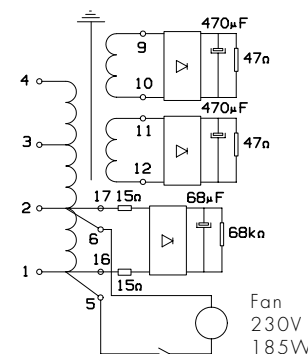
SELF-TRANSFORMER RUNNING.  
Transformer complies with U.L. specifications, concerning all the insulation materials, leakage lines and in-air distances respects.  
Humidity test according to IEC 68-2-23 and 68-2-30

**8 - COILING SPECIFICATION**

Insulation varnish must comply with U.L. specifications.

**9 - QUALIFICATION DYNAMIC TEST**

9.1 Test description.  
Primary: high voltage wiring supply (1-4).  
Secondary: replace real loads in the operation layout by resistances. Their value is calculated to obtain rated current of each coiling for primary rated voltage.  
9.2 Environment.  
Temperature test = 60 °C.  
9.3 Test cycle definition.  
- Network voltage = rated voltage + 17%  
- Energising = 2s.  
- De-energising = 2 s.  
9.4 Test duration.  
240 hours.

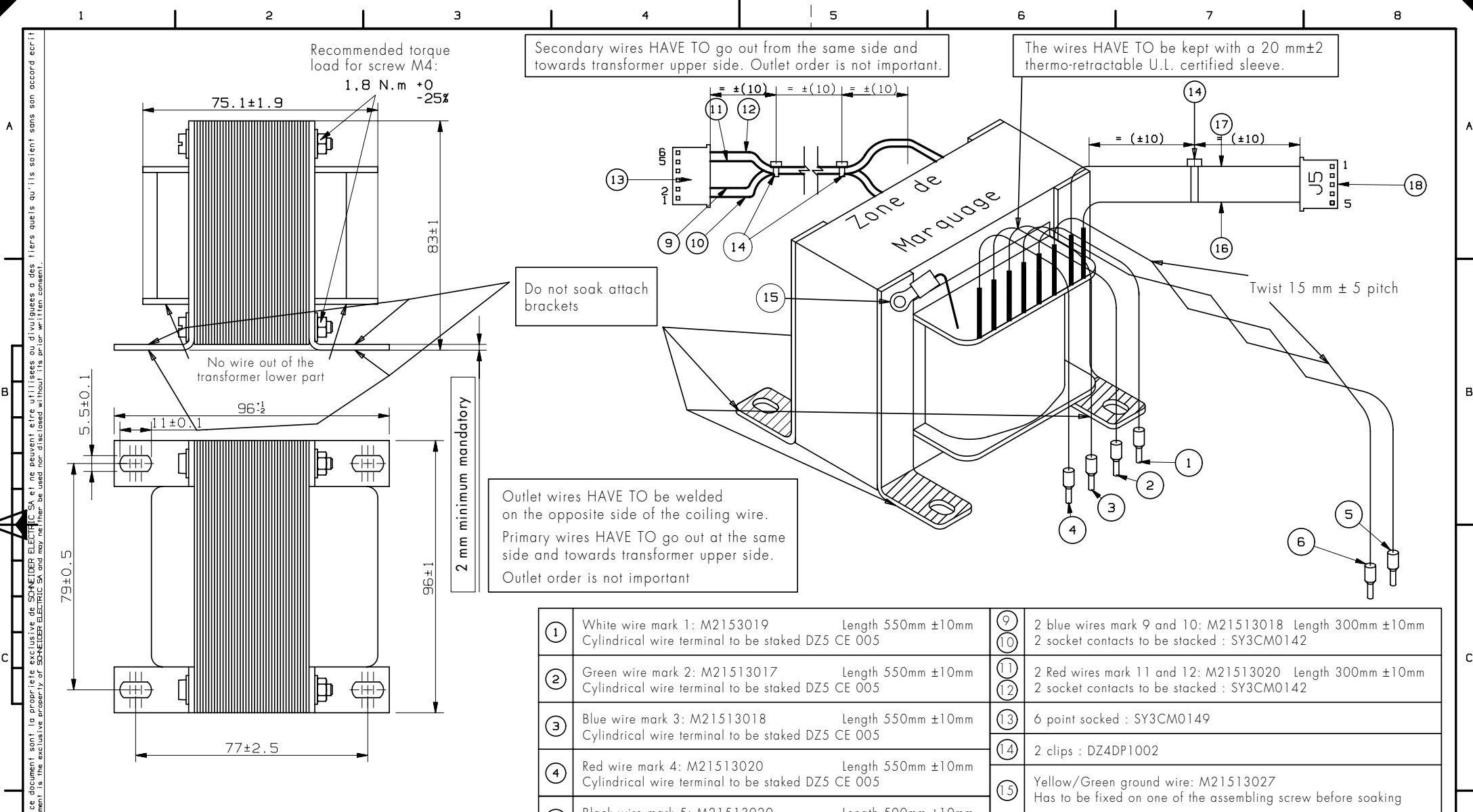


06	/ / 95	.....	.....
05	/ / 95	.....	.....
04	.	fil 1/2/3/4 passe a 550mm/corrige repere nappe 9/10/11/12	
04	11/10/95	J10353	Mise a jour suivant reunion avec fournisseur
03	21/06/95	J10340	modifie leff a vide max et precise epaisseur pattes de fixations
02	30/04/95	J10325	Lancement
0A	12/01/95	SAN5	Lancement/Proto
Ind. rev.	Date date	Note appli. appli. memo	Modification /modification

Echelle /- Project scale 6JC08  
Project 86D4  
Dossier folder  
N° note application application memo n° J10353  
Date date 12/01/95  
Etabli par Issued by D. SENOVILLE

DOCUMENT DE DEFINITION  
DEMARREUR PROGRESSIF - SOFT STARTER  
Taille 4/5 - size 4/5  
TRANSFORMATOR  
ATS46. AUTOTRA. 270VA. 50/60Hz. . . . .  
RADICAL VU IVFI CD IED FOLIO  
**149406001 A06 X 04** 01/02  
Date du tirage: 09/06/1998 C A D R A 8 Format A3

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**MECHANICAL SPECIFICATION:**

Attach brackets must resist to sinusoidal vibrations 0.3 G to 0.7 G 2\_200 Hz, during 1 hour, according to IEC 98-2-6 specification.

**CONNECTION ENGINEERING SPECIFICATION:**

Cables definition: slack wire 600V-105°C, AWG 22; U.L. style 1213.  
 Connection engineering instruction: IC 1010367

①	White wire mark 1: M2153019 Length 550mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑨	2 blue wires mark 9 and 10: M21513018 Length 300mm ±10mm 2 socket contacts to be stacked: SY3CM0142
②	Green wire mark 2: M21513017 Length 550mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑩	2 Red wires mark 11 and 12: M21513020 Length 300mm ±10mm 2 socket contacts to be stacked: SY3CM0142
③	Blue wire mark 3: M21513018 Length 550mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑬	6 point socked: SY3CM0149
④	Red wire mark 4: M21513020 Length 550mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑭	2 clips: DZ4DP1002
⑤	Black wire mark 5: M21513020 Length 500mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑮	Yellow/Green ground wire: M21513027 Has to be fixed on one of the assembling screw before soaking
⑥	Black wire mark 6: M21513020 Length 500mm ±10mm Cylindrical wire terminal to be staked DZ5 CE 005	⑯	2 BLACK wires mark 16 and 17: M21513022 Length 500mm ±10mm 2 socket contacts to be stacked: SY3CM0142
		⑰	
		⑱	5 point socked marked J5: SY3CM0216

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Echelle /-/ scale	Project project	6JC08	N° note application application memo n°	DEMARREUR PROGRESSIF - SOFT STARTER
	Dossier folder	86D4	J10353	Taille 4/5 - size 4/5
DOCUMENT DE DEFINITION			Date date	TRANSFORMATOR
			12/01/95	A.T.S.4.6. T.R.A.N.S.F.O..2.7.0.V.A. 5.0./6.0.H
Etabli par issued by		RADICAL VU IVFI CD IED FOLIO		
D. SENOVILLE		149406001 A06 X 04 02/02		
GROUPE SCHNEIDER		Date du tirage: 09/06/1998 C A D R A 8 Format A3		

PARTS LIST SIZE 4

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940340112	A 10	J30688	01/07/98	<b>ATS46C41N PRODUCT ASSEMBLY</b>
DOCUMENT REFERENCE: 149403401A01		IED: 10		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 THICKNESS 2.5	10.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	6.00000	15/12/96		52.
FJPR121FFDCDF	EQUIPPED WIRE	9.00000	15/12/96		50.
FJPR501KKTATA	EQUIPPED WIRE	2.00000	15/12/96		51.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		5.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		34.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	38.00000	15/12/96		27.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	7.00000	15/12/96		83.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		38.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		33.
V1110520	SCREW H, M5-20, 6.8 ZNC	3.00000	15/12/96		30.
V1110640	SCREW H, M6-40, 6.8 ZNC	11.00000	15/12/96		29.
V1111025	SCREW H, M10-25, 6.8 ZNC	6.00000	15/12/96		81.
V1111035	SCREW H, M10-35, 6.8 ZNC	1.00000	15/12/96		100.
V12215008	NUT M5, WITH INCORP. CS WASHER	4.00000	15/12/96		32.
V12215010	NUT C TO BE STAKED M10, AC ZNC	6.00000	15/12/96		84.
V12225005	TOOTHED CS WASHER 6, AC ZNC	4.00000	15/12/96		37.
V1320600	NUT H, M6, 6 ZNC	27.00000	15/12/96		25.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96		101.
V1630500	WASHER M, 5, AC ZNC	3.00000	15/12/96		31.
V1630600	WASHER M, 6, AC ZNC	33.00000	15/12/96		26.
V1631000	WASHER M, 10, AC ZNC	6.00000	15/12/96		82.
W10029122	SPREADER CB L20 D14	6.00000	15/12/96		18.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		35.
W103850870211	EQUIPED SCREW + - M4-10	4.00000	15/12/96		88.
W103851350111	EQUIPED SCREW + - M3-10	3.00000	15/12/96		64.

W103851350311	EQUIPED SCREW + - M3-8	21.00000	15/12/96	104.
W10598599	CLAMPING PLATE	9.00000	15/12/96	73.
W114940150111	ATS46 FRONT SIDE CASING T4	1.00000	15/12/96	21.
W20322295001	POLE STRAP LMPR L=97MM	6.00000	15/12/96	9.
W213642400112	ATSC41/58 INPUT IN TINNED COPPER	3.00000	15/12/96	6.
W213643320111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	80.
W213643330111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	7.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	10.
W414940730111	PRODUCT LABEL ATS46C41N	1.00000	15/12/96	23.
W414940740112	LABEL ALTISTART 46 T4	1.00000	01/03/98	91.
W71265267	SPREADER BAR VR1	1.00000	15/12/96	8.
W803857500111	JC08 INTERFACE C41 PO PWB	1.00000	15/12/96	24.
W813027300411	SUB ASSY RACK 900A.1600V. *	3.00000	15/12/96	3.
W813027301111	SUB ASSY RACK 900A 1600V SKT	3.00000	15/12/96	3.
W813109240111	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	54.
W813110270212	C IGNITER PROTECTION 380/500V	3.00000	15/12/96	17.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	63.
W813642640111	ATS23 C IGNITER COUPLING/J4	1.00000	15/12/96	55.
W813642640211	ATS23 C IGNITER COUPLING/J6	1.00000	15/12/96	56.
W813642640311	ATS23 C IGNITER COUPLING/J8	1.00000	15/12/96	57.
W813643620111	ATS23 C41/58 EARTH MARKING *	1.00000	15/12/96	62.
W814940120111	ASSY G & D SIDES T4	1.00000	15/12/96	22.
W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	53.
W814940600112	TRANSFORMER 120VA 225-390/475V	1.00000	01/07/98	58.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	19.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	58.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	58A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	59.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	59A.
W814940860511	ATS46 T4 CABLE BUNDLE J31	1.00000	15/12/96	60.
W814940860611	ATS46 T4 CABLE BUNDLE J32	1.00000	15/12/96	60A.
W814941170111	ATS46 T4 SUB ASSY EQUIPPED HOUSING	1.00000	15/12/96	1.
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96	41.

W903870760111	WHITE MARKING LABEL 22X7	1.00000	15/12/96	39.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	36-40.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	01/03/98	103.
W914941011111	LABEL V11A	1.00000	15/12/96	11.
W914941011211	LABEL V12A	1.00000	15/12/96	12.
W914941011311	LABEL V13A	1.00000	15/12/96	13.
W914941011411	LABEL V14A	1.00000	15/12/96	14.
W914941011511	LABEL V15A	1.00000	15/12/96	15.
W914941011611	LABEL V16A	1.00000	15/12/96	16.
W914941150111	MARKING LABEL 34X15 MM	1.00000	15/12/96	39.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	105.
FIN D EXPLOSION				



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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W814940340212            A 10                                    J30688                    01/07/98                    **ATS46C48N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403402A01                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 THICKNESS 2.5	10.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	6.00000	15/12/96		52.
FJPR121FFDCDF	EQUIPPED WIRE	9.00000	15/12/96		50.
FJPR501KKTATA	EQUIPPED WIRE	2.00000	15/12/96		51.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		5.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		34.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	38.00000	15/12/96		27.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	7.00000	15/12/96		83.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		38.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		33.
V1110520	SCREW H, M5-20, 6.8 ZNC	3.00000	15/12/96		30.
V1110640	SCREW H, M6-40, 6.8 ZNC	11.00000	15/12/96		29.
V1111025	SCREW H, M10-25, 6.8 ZNC	6.00000	15/12/96		81.
V1111035	SCREW H, M10-35, 6.8 ZNC	1.00000	15/12/96		100.
V12215008	NUT M5, WITH INCORP. CS WASHER	4.00000	15/12/96		32.
V12215010	C NUT TO BE STAKED M10, AC ZNC	6.00000	15/12/96		84.
V12225005	TOOTHED CS WASHER 6, AC ZNC	4.00000	15/12/96		37.
V1320600	NUT H, M6, 6 ZNC	27.00000	15/12/96		25.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96		101.
V1630500	WASHER M, 5, AC ZNC	3.00000	15/12/96		31.
V1630600	WASHER M, 6, AC ZNC	33.00000	15/12/96		26.
V1631000	WASHER M, 10, AC ZNC	6.00000	15/12/96		82.
W10029122	SPREADER CB L20 D14	6.00000	15/12/96		18.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		35.
W103850870211	EQUIPED SCREW + - M4-10	4.00000	15/12/96		88.
W103851350111	EQUIPED SCREW + - M3-10	3.00000	15/12/96		64.

W103851350311	EQUIPED SCREW + - M3-8	21.00000	15/12/96	104.
W105985	CLAMPING PLATE	9.00000	15/12/96	73.
W114940150111	ATS46 FRONT SIDE CASING T4	1.00000	15/12/96	21.
W20322295001	POLE STRAP LMPR L=97MM	12.00000	15/12/96	9.
W213642400112	ATSC41/58 INPUT IN TINNED COPPER	3.00000	15/12/96	6.
W213643320111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	80.
W213643330111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	7.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	10.
W414940730211	PRODUCT LABEL ATS46C48N	1.00000	15/12/96	23.
W414940740112	LABEL ALTISTART 46 T4	1.00000	01/03/98	91.
W71265267	SPREADER BAR VR1	1.00000	15/12/96	8.
W803857500211	JC08 INTERFACE C48 PO PWB	1.00000	15/12/96	24.
W813027300711	SUB ASSY RACK 1200A.1600V. *	3.00000	15/12/96	3.
W813027301311	SUB ASSY RACK 1200A.1600V. *	3.00000	01/03/98	3.
W813109240111	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	54.
W813110270212	C IGNITER PROTECTION 380/500V	3.00000	15/12/96	17.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	63.
W813642640111	ATS23 C IGNITER COUPLING/J4	1.00000	15/12/96	55.
W813642640211	ATS23 C IGNITER COUPLING/J6	1.00000	15/12/96	56.
W813642640311	ATS23 C IGNITER COUPLING/J8	1.00000	15/12/96	57.
W813643620111	ATS23 C41/58 EARTH MARKING *	1.00000	15/12/96	62.
W814940120111	ASSY G & D SIDES T4	1.00000	15/12/96	22.
W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	53.
W814940600112	TRANSFORMER 120VA 225-390/475V	1.00000	01/07/98	58.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	19.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	58.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	58A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	59.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	59A.
W814940860511	ATS46 T4 CABLE BUNDLE J31	1.00000	15/12/96	60.
W814940860611	ATS46 T4 CABLE BUNDLE J32	1.00000	15/12/96	60A.
W814941170111	ATS46 T4 SUB ASSY EQUIPPED HOUSING	1.00000	15/12/96	1.
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96	41.

W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	36-40.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	15/12/96	103.
W914941011111	LABEL V11A	1.00000	15/12/96	11.
W914941011211	LABEL V12A	1.00000	15/12/96	12.
W914941011311	LABEL V13A	1.00000	15/12/96	13.
W914941011411	LABEL V14A	1.00000	15/12/96	14.
W914941011511	LABEL V15A	1.00000	15/12/96	15.
W914941011611	LABEL V16A	1.00000	15/12/96	16.
W914941150111	MARKING LABEL 34X15 MM	2.00000	15/12/96	39.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	105.
FIN D EXPLOSION				

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SYMBOL                    ITEM                                    NOTE NBR                    IMPL DATE                    COMPONENT DESIGNATION  
W814940340312            A 10                                    J30688                    01/07/98                    **ATS46C59N PRODUCT ASSEMBLY**

DOCUMENT REFERENCE: 149403403A01                    IED: 10

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 THICKNESS 2.5	6.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	6.00000	15/12/96		52.
FJPR121FFDCDF	EQUIPPED WIRE	9.00000	15/12/96		50.
FJPR501KKTATA	EQUIPPED WIRE	2.00000	15/12/96		51.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		5.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		34.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	38.00000	15/12/96		27.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	7.00000	15/12/96		83.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		38.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		33.
V1110520	SCREW H, M5-20, 6.8 ZNC	3.00000	15/12/96		30.
V1110640	SCREW H, M6-40, 6.8 ZNC	11.00000	15/12/96		29.
V1111025	SCREW H, M10-25, 6.8 ZNC	6.00000	15/12/96		81.
V1111035	SCREW H, M10-35, 6.8 ZNC	1.00000	15/12/96		100.
V12215008	NUT M5, WITH INCORP. CS WASHER	4.00000	15/12/96		32.
V12215010	C NUT TO BE STAKED M10, AC ZNC	6.00000	15/12/96		84.
V12225005	TOOTHED CS WASHER 6, AC ZNC	4.00000	15/12/96		37.
V1320600	NUT H, M6, 6 ZNC	27.00000	15/12/96		25.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96		101.
V1630500	WASHER M, 5, AC ZNC	3.00000	15/12/96		31.
V1630600	WASHER M, 6, AC ZNC	33.00000	15/12/96		26.
V1631000	WASHER M, 10, AC ZNC	6.00000	15/12/96		82.
W10029122	SPREADER CB L20 D14	6.00000	15/12/96		18.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		35.
W103850870211	EQUIPED SCREW + - M4-10	4.00000	15/12/96		
W103851350111	EQUIPED SCREW + - M3-10	3.00000	15/12/96		64.

W103851350311	EQUIPED SCREW + - M3-8	21.00000	15/12/96	104.
W105985	CLAMPING PLATE	9.00000	15/12/96	73.
W114940150111	ATS46 FRONT SIDE CASING T4	1.00000	15/12/96	21.
W20322295001	POLE STRAP LMPR L=97MM	12.00000	15/12/96	9.
W213642400112	ATSC41/58 INPUT IN TINNED COPPER	3.00000	15/12/96	6.
W213643320111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	80.
W213643330111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	7.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	10.
W414940730311	PRODUCT LABEL ATS46C59N	1.00000	15/12/96	23.
W414940740112	LABEL ALTISTART 46 T4	1.00000	01/03/98	91.
W71265267	SPREADER BAR VR1	1.00000	15/12/96	8.
W803857500311	JC08 INTERFACE C59 PO PWB	1.00000	15/12/96	
W813027300711	SUB ASSY RACK 1200A.1600V. *	3.00000	15/12/96	3.
W813027301311	SUB ASSY RACK 1200A.1600V. *	3.00000	01/03/98	3.
W813109240111	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	54.
W813110270212	C IGNITER PROTECTION 380/500V	3.00000	15/12/96	17.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	63.
W813642640111	ATS23 C IGNITER COUPLING/J4	1.00000	15/12/96	55.
W813642640211	ATS23 C IGNITER COUPLING/J6	1.00000	15/12/96	56.
W813642640311	ATS23 C IGNITER COUPLING/J8	1.00000	15/12/96	57.
W813643620111	ATS23 C41/58 EARTH MARKING *	1.00000	15/12/96	62.
W814940120111	ASSY G & D SIDES T4	1.00000	15/12/96	22.
W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	
W814940600112	TRANSFORMER 120VA 225-390/475V	1.00000	01/07/98	58.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	19.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	58.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	58A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	59.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	59A.
W814940860511	ATS46 T4 CABLE BUNDLE J31	1.00000	15/12/96	60.
W814940860611	ATS46 T4 CABLE BUNDLE J32	1.00000	15/12/96	60A.
W814941170111	ATS46 T4 SUB ASSY EQUIPPED HOUSING	1.00000	15/12/96	
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96	41.

W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	36-40.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	15/12/96	103.
W914941011111	LABEL V11A	1.00000	15/12/96	11.
W914941011211	LABEL V12A	1.00000	15/12/96	12.
W914941011311	LABEL V13A	1.00000	15/12/96	13.
W914941011411	LABEL V14A	1.00000	15/12/96	14.
W914941011511	LABEL V15A	1.00000	15/12/96	15.
W914941011611	LABEL V16A	1.00000	15/12/96	16.
W914941150111	MARKING LABEL 34X15 MM	2.00000	15/12/96	39.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	105.
FIN D EXPLOSION				

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940340412	A 10	J30688	01/07/98	<b>ATS46C66N PRODUCT ASSEMBLY</b>
DOCUMENT REFERENCE: 149403404A01		IED: 10		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 THICKNESS 2.5	10.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	6.00000	15/12/96		52.
FJPR121FFDCDF	EQUIPPED WIRE	9.00000	15/12/96		50.
FJPR501KKTATA	EQUIPPED WIRE	2.00000	15/12/96		51.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		5.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		34.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	38.00000	15/12/96		27.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	7.00000	15/12/96		83.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		38.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		33.
V1110520	SCREW H, M5-20, 6.8 ZNC	3.00000	15/12/96		30.
V1110640	SCREW H, M6-40, 6.8 ZNC	11.00000	15/12/96		29.
V1111025	SCREW H, M10-25, 6.8 ZNC	6.00000	15/12/96		81.
V1111035	SCREW H, M10-35, 6.8 ZNC	1.00000	15/12/96		100.
V12215008	NUT M5,WITH INCORP. CS WASHER	4.00000	15/12/96		32.
V12215010	C NUT TO BE STAKED M10,AC ZNC	6.00000	15/12/96		84.
V12225005	TOOTHED CS WASHER 6, AC ZNC	4.00000	15/12/96		37.
V1320600	NUT H, M6, 6 ZNC	27.00000	15/12/96		25.
V1321000	NUT H, M10, 6 ZNC	1.00000	15/12/96		101.
V1630500	WASHER M, 5, AC ZNC	3.00000	15/12/96		31.
V1630600	WASHER M, 6, AC ZNC	33.00000	15/12/96		26.
V1631000	WASHER M, 10, AC ZNC	6.00000	15/12/96		82.
W10029122	SPREADER CB L20 D14	6.00000	15/12/96		18.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		35.
W103850870211	EQUIPED SCREW + - M4-10	1.00000	15/12/96		88.
W103851350111	EQUIPED SCREW + - M3-10	3.00000	15/12/96		64.

W103851350311	EQUIPED SCREW + - M3-8	21.00000	15/12/96	104.
W105985	CLAMPING PLATE	9.00000	15/12/96	73.
W114940150111	ATS46 FRONT SIDE CASING T4	1.00000	15/12/96	21.
W20322295001	POLE STRAP LMPR L=97MM	12.00000	15/12/96	9.
W213642400112	ATSC41/58 INPUT IN TINNED COPPER	3.00000	15/12/96	6.
W213643320111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	80.
W213643330111	ATS C41/58 OUTPUT BAR	3.00000	15/12/96	7.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	10.
W414940730411	PRODUCT LABEL ATS46C66N	1.00000	15/12/96	23.
W414940740112	LABEL ALTISTART 46 T4	1.00000	01/03/98	91.
W71265267	SPREADER BAR VR1	1.00000	15/12/96	8.
W803857500411	JC08 INTERFACE C66 PO PWB	1.00000	15/12/96	24.
W813027300711	SUB ASSY RACK 1200A.1600V. *	3.00000	15/12/96	3.
W813027301311	SUB ASSY RACK 1200A.1600V. *	3.00000	01/03/98	3.
W813109240111	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	54.
W813110270212	C IGNITER PROTECTION 380/500V	3.00000	15/12/96	17.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	63.
W813642640111	ATS23 C IGNITER COUPLING/J4	1.00000	15/12/96	55.
W813642640211	ATS23 C IGNITER COUPLING/J6	1.00000	15/12/96	56.
W813642640311	ATS23 C IGNITER COUPLING/J8	1.00000	15/12/96	57.
W813643620111	ATS23 C41/58 EARTH MARKING *	1.00000	15/12/96	62.
W814940120111	ASSY G & D SIDES T4	1.00000	15/12/96	22.
W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	53.
W814940600112	TRANSFORMER 120VA 225-390/475V	1.00000	01/07/98	58.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	19.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	58.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	58A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	59.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	59A.
W814940860511	ATS46 T4 CABLE BUNDLE J31	1.00000	15/12/96	60.
W814940860611	ATS46 T4 CABLE BUNDLE J32	1.00000	15/12/96	60A.
W814941170111	ATS46 T4 SUB ASSY EQUIPPED HOUSING	1.00000	15/12/96	1.
W90364819	WHITE LABEL 13X6.5	2.00000	15/12/96	41.



W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	36-40.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	15/12/96	103.
W914941011111	LABEL V11A	1.00000	15/12/96	11.
W914941011211	LABEL V12A	1.00000	15/12/96	12.
W914941011311	LABEL V13A	1.00000	15/12/96	13.
W914941011411	LABEL V14A	1.00000	15/12/96	14.
W914941011511	LABEL V15A	1.00000	15/12/96	15.
W914941011611	LABEL V16A	1.00000	15/12/96	16.
W914941150111	MARKING LABEL 34X15 MM	2.00000	15/12/96	39.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	105.
FIN D EXPLOSION				

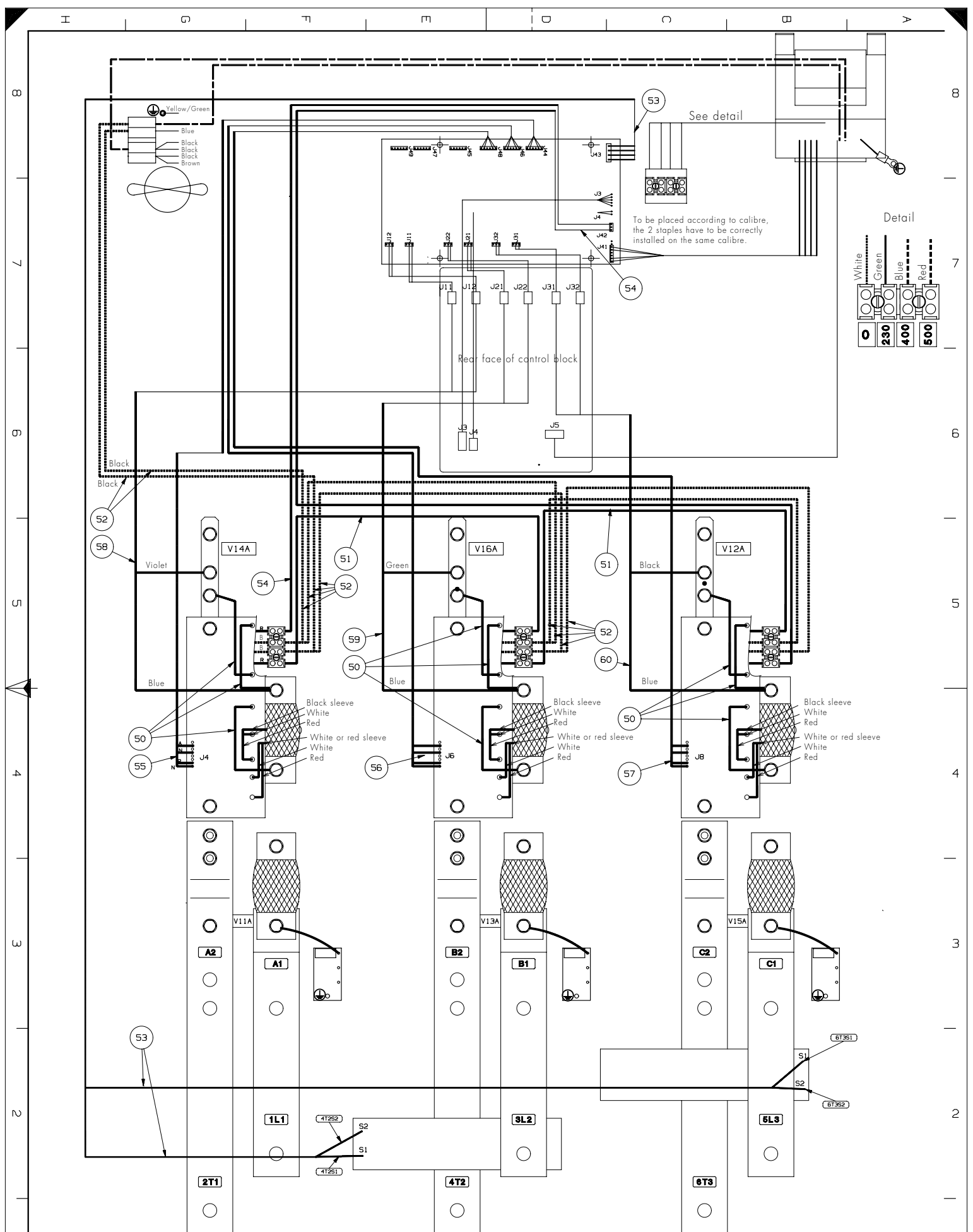
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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814941020711	A 05	J30333	18/04/97	<b>KIT PACK WIRING T4</b>
DOCUMENT REFERENCE:	149410207A01	IED: 06		

\*\*\*\*\*

COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M93731035	TRANSPARENT PE SLEEVE E90M L240	0.01500	04/11/96		4.
REPLACES:	OLD: J940702				
VD0C32Q301	GE ATS 46	1.00000	04/11/96		14.
W808780220111	M12 BOLTS PACK	5.00000	04/11/96		7.
W813819520111	TIME RELAY OUTPUT CONNECTOR	1.00000	04/11/96		1.
W813819530111	CONN.CONT TAMPOGRAPHIE	1.00000	04/11/96		2.
W914941150111	MARKING LABEL 34X15 MM	1.00000	18/04/97		3.
FIN D EXPLOSION					

## INTERCONNECTION LAYOUT



N° de note	Date emission	Emetteur	IED	Modification	Parametre UJ
J10308	12/04/96	R. PICHÉREAU	01	Lancement des nomenclatures	
J10330	17/06/96	R. PICHÉREAU	02	DIFFUSION DES PLANS	
J10337	12/07/96	R. PICHÉREAU	03	inverse j11/j12 avec j31/j32	
J10349	15/09/96	R. PICHÉREAU	04	autorise serrage des 3 fils bleu sur vis superieure	
J10356	31/10/96	R. PICHÉREAU	05	INVERSE BLEU/VIOLET, BLEU/VERT, BLEU/NOIR	
J30680	26/02/97	D. SENDVILLE	06	Reperage des fils de la nappe T1	

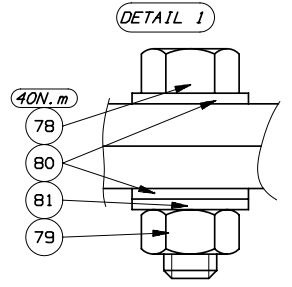
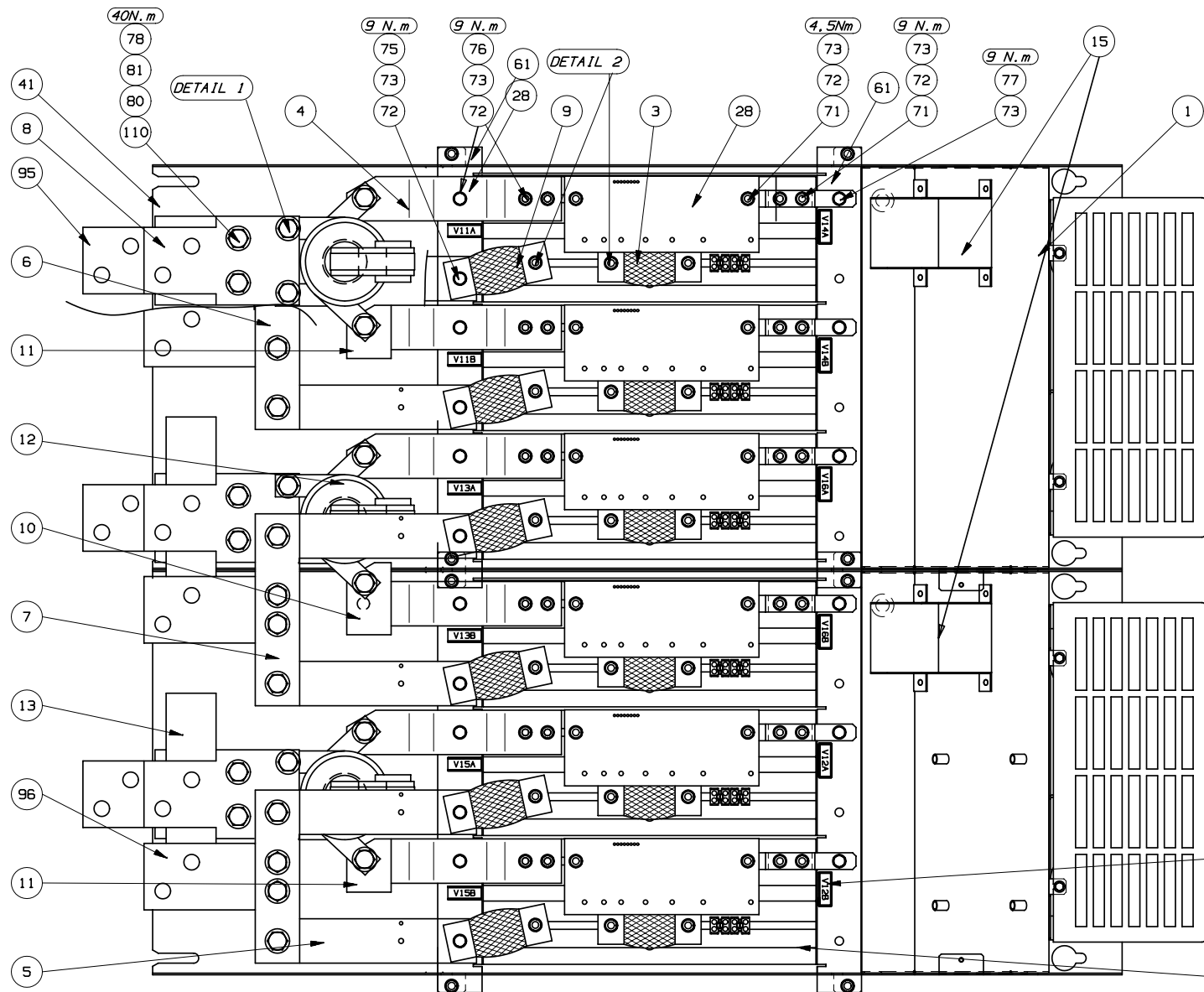
  

Etébli	Dates	Noms	Echelle	DEMARREUR PROGRESSIF
Note appl	26/02/98	n° J30680		
Projet		6JCO8	RADICAL	VU IVF1 CD IED FOL10
Dossier		8884		
Format		A2		

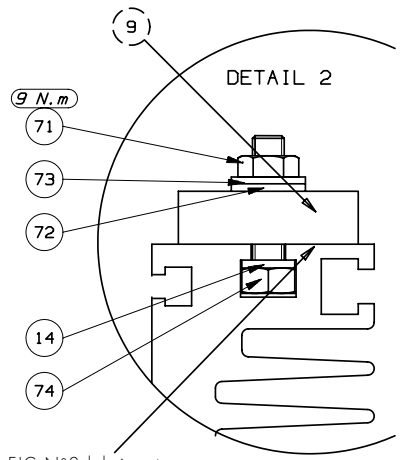
  

Telemecanique			PLAN D'INTERCONNEXION T4	
			149403401A42	06
			1	1

ASSEMBLY SIZE 5



Double in M 10/M 12  
see nomenclatures

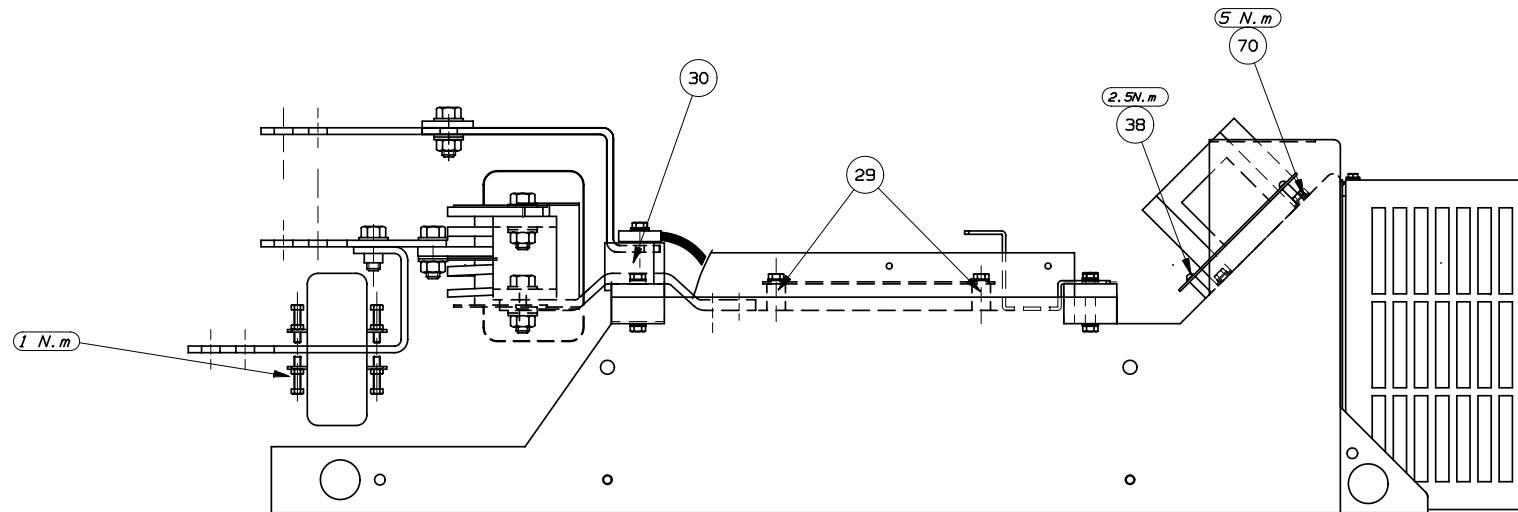


Alcoa EJC N°2 Lubricant

SYMBOLE ARTICLE		W	
N° de note	Date emission	Emetteur	IED
J10308	12/04/96	R.PICHEREAU	01
J10331	17/06/96	R.PICHEREAU	02
J10349	16/09/96	R.PICHEREAU	03
J30339	12/06/97	D.SENVILLE	05
.	.	.	06
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.	.	.	.

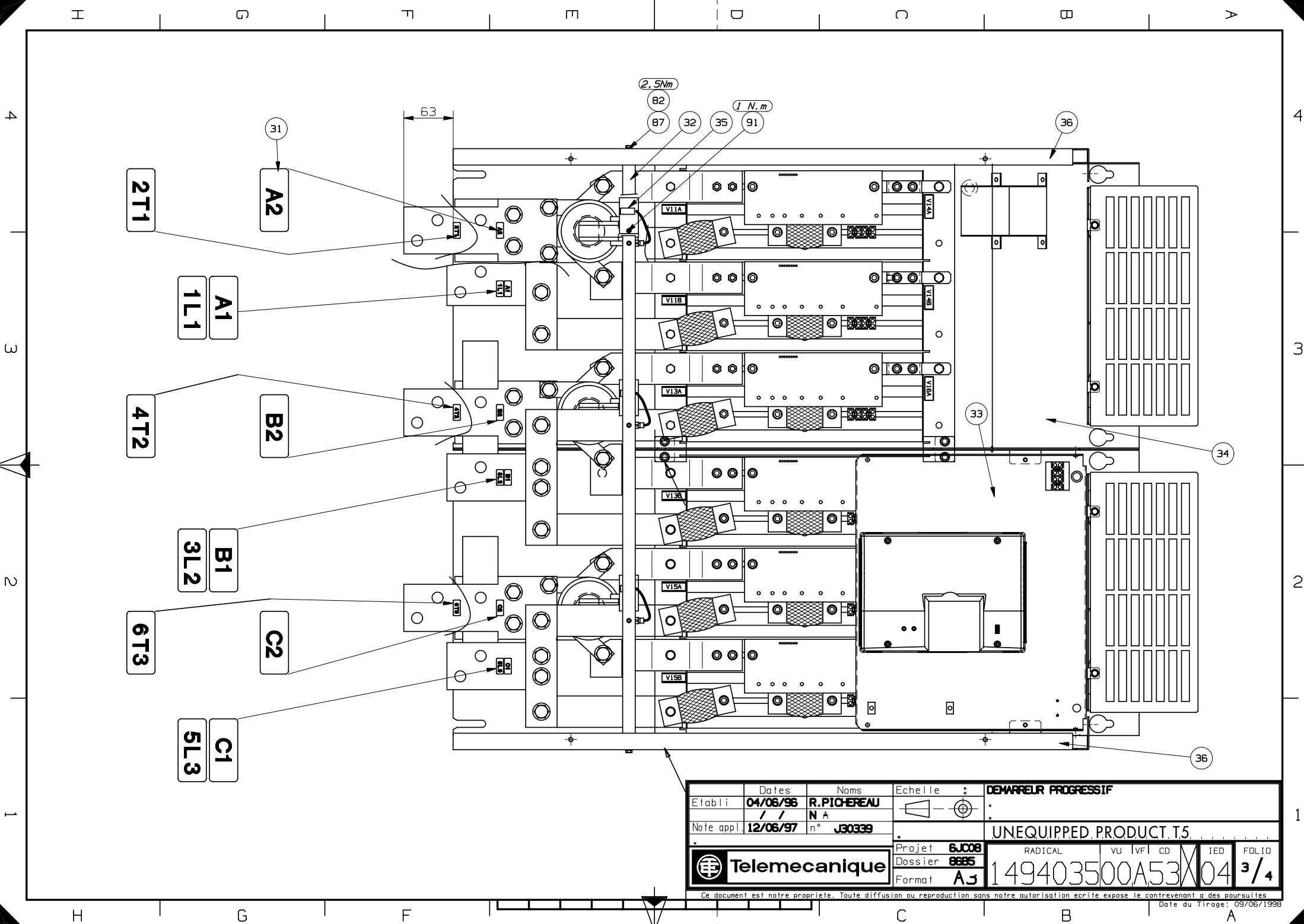
Modification	Parametre WJ
Lancement des nomenclatures	
DIFFUSION DES PLANS	
ajoute fleche sur repere 72/73/76 et change orientation transfo	
ajoute repere 200	
Suppression repere 200.	
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.	
.	

Etabli	Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
	04/06/96	R.PICHEREAU		
Note appl.	/ /	N A		
	12/06/97	n° J30339		
Projet				6JC08
Dossier				8885
Format				A3
149403500A53		X04		1/4
RADICAL		VU	IVFI	CD
IED		FOLIO		



Etabli		Dates	Noms	Echelle	:	DEMARREUR PROGRESSIF				
/ /		04/06/96	R. PIGEREAU		:					
Note appl.		12/06/97	n° J30339		UNEQUIPPED PRODUCT T5					
Projet		6JC08		RADICAL		VU	IVFI	CD	IED	FOLIO
Dossier		6665		149403500A53		X04		2/4		
Format		A3								

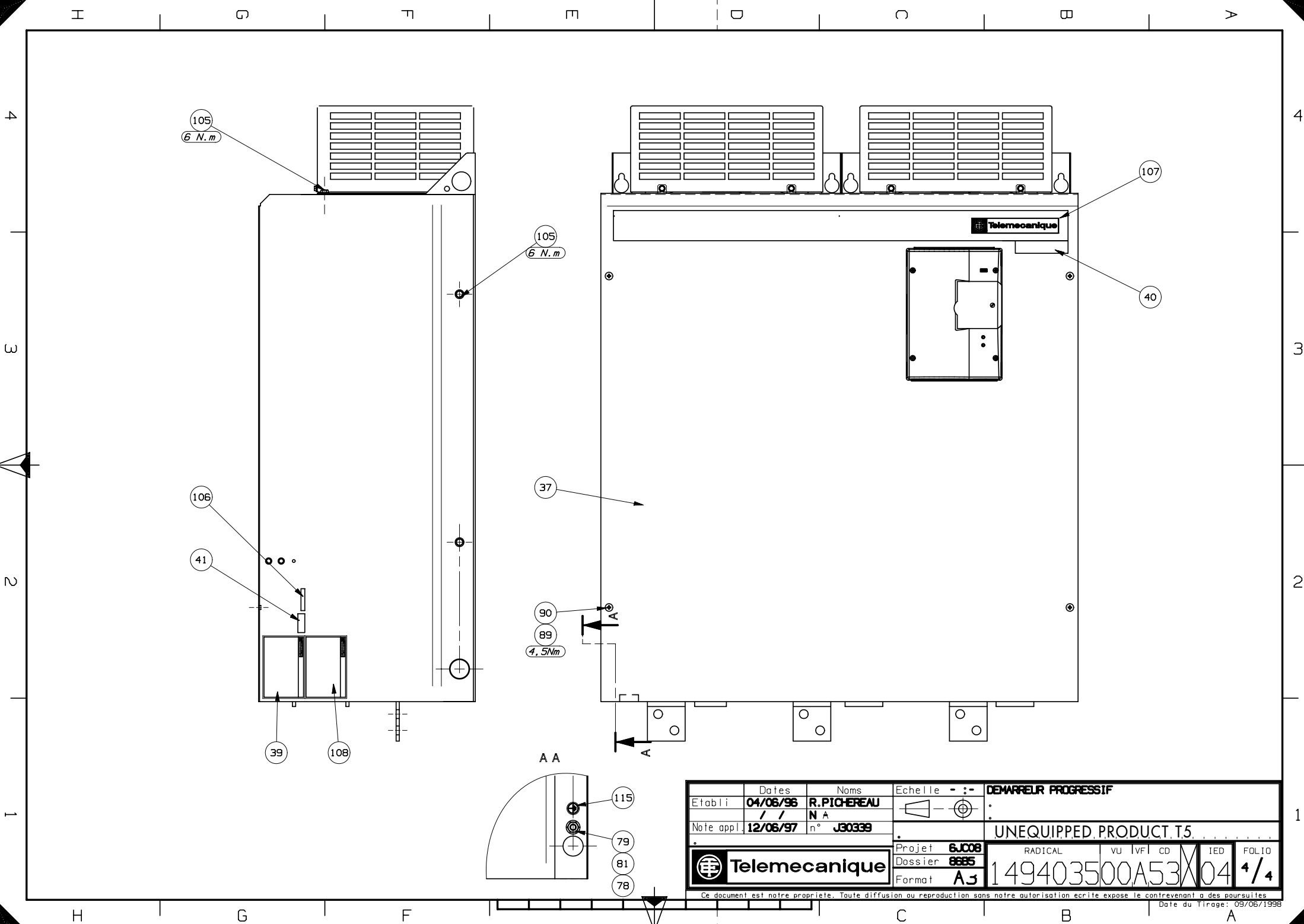
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Date du Tirage: 09/06/1998



Etabli	Dates	Noms	Echelle	: DEMARREUR PROGRESSIF
/ /	04/06/96	R. PIGEREAU	1:1	
Note appl.	12/06/97	n° JB0339		UNEQUIPPED PRODUCT T.5
<b>Telemecanique</b>			Projet	6JC08
			Dossier	6665
			Format	A3
		RADICAL VU VFI CD IED FOLIO <b>149403500A53X04</b>		<b>3/4</b>

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Date du Tirage: 09/06/1998

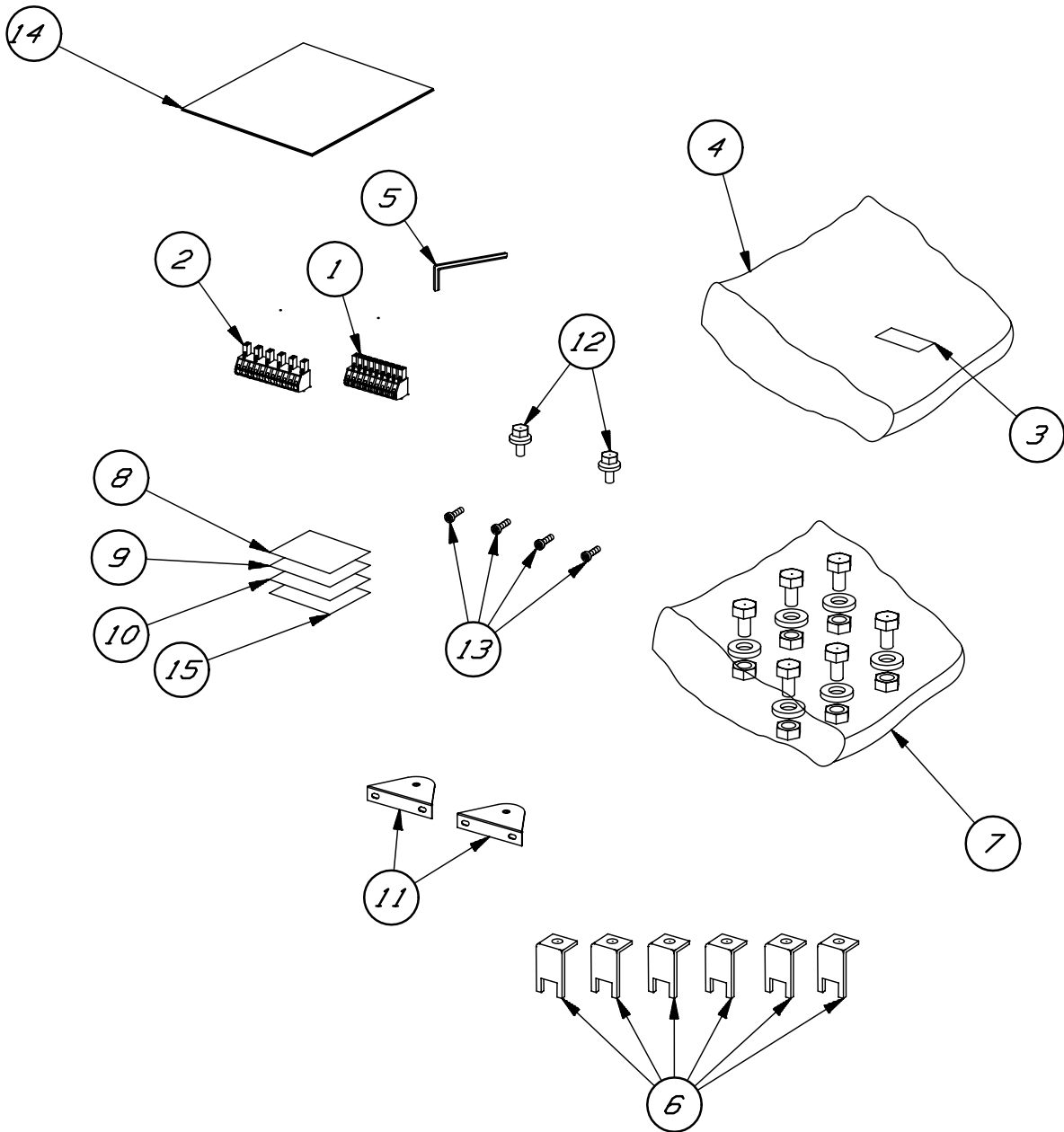




Etabli		Dates	Noms	Echelle	- : -		<b>DEMARREUR PROGRESSIF</b>	
/ /		04/06/96	R. PIGEREAU	1 : 1				
Note appl.		12/06/97	n° J30339			UNEQUIPPED PRODUCT T.5		
Projet		6JC08	RADICAL		VU	IVFI	CD	IED
Dossier		6665	149403500A53		X04		FOLIO	
Format		A3					4 / 4	

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Date du Tirage: 09/06/1998

4



SYMBOLE ARTICLE					
N° de note	Date emission	Emetteur	IED	Modification	Parametre VU
J10308	12/04/96	R.PICHEREAU	01	Lancement des nomenclatures	
J10327	10/06/96	R.PICHEREAU	02	diffusion du plan	
J10356	31/10/96	R.PICHEREAU	03	ajoute guide d'exploitation	
J10368	31/11/96	R.PICHEREAU	04	ajoute etiquette rep 15	
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Dates		Noms		Echelle : 1	
Etabli	04/06/96	R.PICHEREAU		DEMARREUR PROGRESSIF	
	/ /	NA			
Note appl.	31/11/96	n° J10368		ALTISTART46 KIT PACK WIRING	
Projet 6JC08		RADICAL		VU   VF   CD	IED FOLIO
Dossier 88C2		149410200A53		04	1/1
Format A1					

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Date du Tirage: 08/07/1998

D

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C

B

A

**1 - RANGE OF IMPLEMENTATION**

These transformers are designed to be used on 50-60 Hz network.  
They follow the specification NF C 52-200 = Rated power ≤ 16 kVA; rated frequency ≤ 500 Hz; rated voltage ≤ 1100 V.

**2 - INSTALLATION AND ASSEMBLY CONDITIONS**

**Ambient temperature.**

- Running (if >40°C)  °C  
- Storage (if >40°C)  °C

Installation altitude  
(if >1 000 m)  m

**3 - ELECTRIC CHARACTERISTICS**

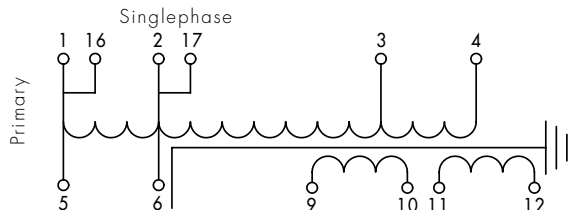
Rated power  VA  
Rated frequency  Hz

Singlephase transformer   
triphasé

**3.1 Servicing**

Continuous servicing  S1  
Temporary servicing  S2 : if yes, running duration  mn  
Periodic intermittent servicing  S3 : if yes, cycle  mn run coefficient  %

**3.2 Connection diagram**



**3.3 Primary winding.**

Reference	1 - 2	1 - 3	1 - 4
Rated eff. volt. (V)	225 V ± 17%	390 V ± 17%	475 V ± 17%
Rated eff. intensity (I) at max vacuum			45mA

**3.4 Secondary winding**

Reference	5 - 6 (*)	16 - 17 (*)	9 - 10	11 - 12
Rated eff. volt. (V) (1)	225 V ± 5%	225 V ± 5%	22.5 to 23.5 V	21.5 to 22.5 V
Rated eff. intensity (I)	1 A	0.1 A	0.75 A	0.1 A
Rated eff. volt. (V) (2) at max vacuum	250 V	250 V	28 V	27 V

(\*) Self-transformer running on connections marked 5, 6, 16 and 17  
(1) With rated primary voltage and rated secondary intensity. (on each secondary wiring)  
(2) With rated primary voltage

**3.5 Earth connection test voltage**

This tension is alternatively applied between each wiring and the other ones connected to the transformer earth.  
If the conditions are different, they have to be specified in chapter 7: particular conditions.  
Value kept for the test voltage

**4 - MANUFACTURING CHARACTERISTICS**

4.1 Insulator limit temperature  °C Class   
4.2 Protection degree IP000  IP103   
4.3 Cooling mode (to be specified by the manufacturer)  
Dry transformer  Soaked transformer  Coil  Coated transformer   
Circuit   
4.4 Processing  
Execution II according to guide UTE C63-100

**5 - MARKING**

It will be strictly obliged to include:  
- Industrial symbol.  
- Manufacturer name or logo.  
- Code date

**W814940600111xx**  
↑  
Item identification

**6 - PACKING**

Expanded polystyrene is not allowed.

**7 - PARTICULAR CONDITIONS**

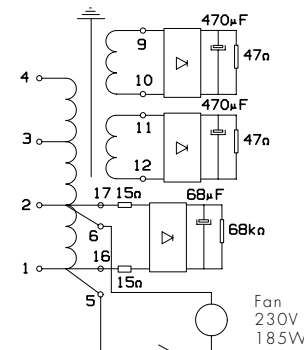
SELF-TRANSFORMER RUNNING.  
Transformer complies with U.L. specifications, concerning all the insulation materials, leakage lines and in-air distances respects.  
Humidity test according to IEC 68-2-23 and 68-2-30

**8 - COILING SPECIFICATION**

Insulation varnish must comply with U.L. specifications.

**9 - QUALIFICATION DYNAMIC TEST**

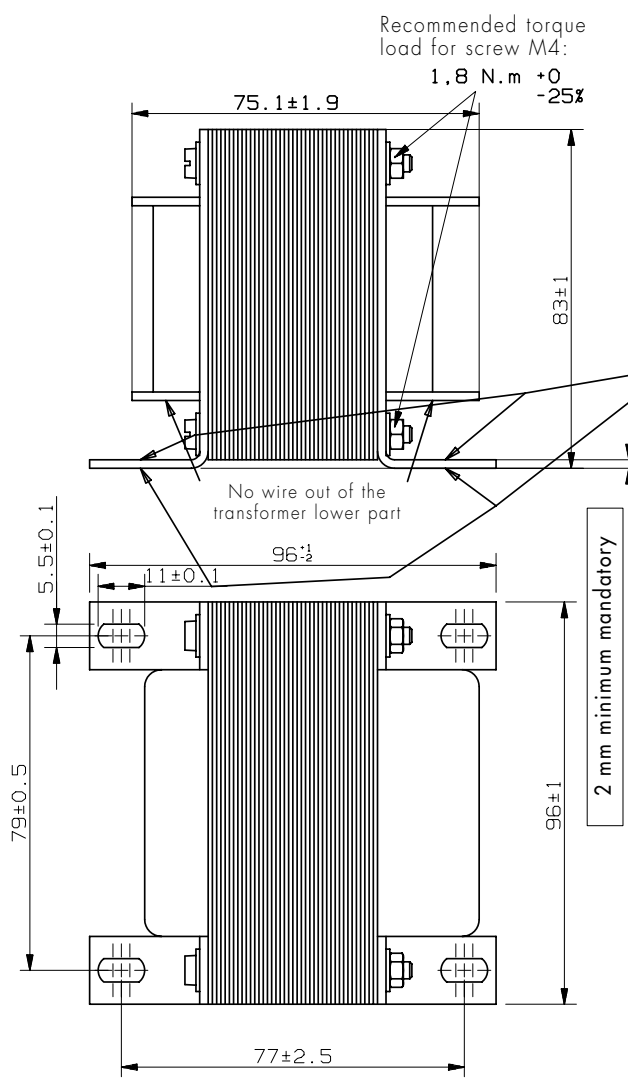
9.1 Test description.  
Primary: high voltage wiring supply (1-4).  
Secondary: replace real loads in the operation layout by resistances. Their value is calculated to obtain rated current of each coiling for primary rated voltage.  
9.2 Environment.  
Temperature test = 60 °C.  
9.3 Test cycle definition.  
- Network voltage = rated voltage + 17%  
- Energising = 2s.  
- De-energising = 2 s.  
9.4 Test duration.  
240 hours.



06	/	95	.....	.....
05	/	95	.....	.....
04	.		fil 1/2/3/4 passe a 550mm/corrige repere nappe 9/10/11/12	
04	11/10/95	J10353	Mise a jour suivant reunion avec fournisseur	
03	21/06/95	J10340	modifie leff a vide max et precise epaisseur pattes de fixations	
02	30/04/95	J10325	Lancement	
0A	12/01/95	SANS	Lancement/Proto	
Ind. rev.	Date	Note appli.	Modification /modification	
rev.	date	appli. memo		

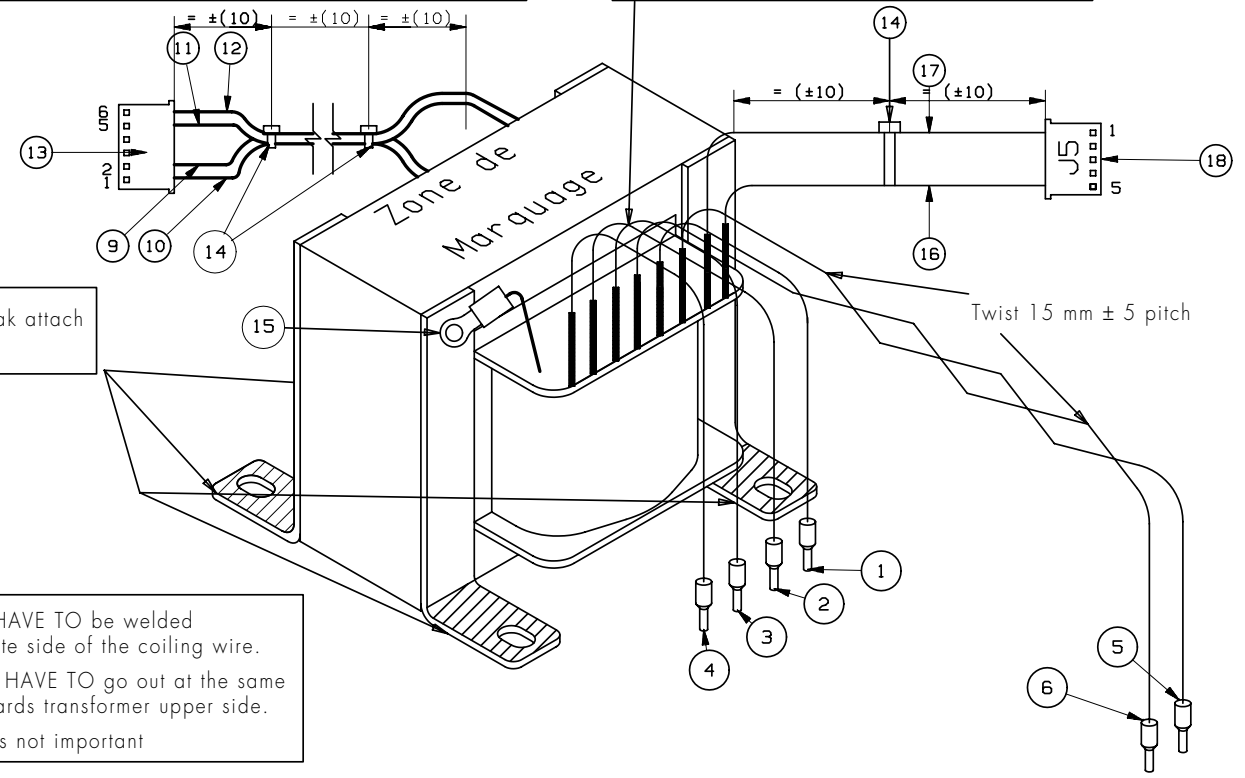
Echelle scale	-/-	Project project	6JC08	N° note application application memo n°	J10353	DEMARREUR PROGRESSIF - SOFT STARTER
Dossier folder		86D4		Date date	12/01/95	Taille 4/5 - size 4/5
DOCUMENT DE DEFINITION			Etabli par Issued by		D. SENOVILLE	TRANSFORMATOR
TELEMECANIQUE			RADICAL		VU IVFI CD	IED FOLIO
GROUPE SCHNEIDER			149406001 A06		X	04 01/02
			Date du tirage: 09/06/1995		C A D R A	Format A3

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Secondary wires HAVE TO go out from the same side and towards transformer upper side. Outlet order is not important.

The wires HAVE TO be kept with a  $20 \text{ mm} \pm 2$  thermo-retractable U.L. certified sleeve.



Do not soak attach brackets

Outlet wires HAVE TO be welded on the opposite side of the coiling wire.  
 Primary wires HAVE TO go out at the same side and towards transformer upper side.  
 Outlet order is not important

**MECHANICAL SPECIFICATION:**

Attach brackets must resist to sinusoidal vibrations  $0.3 \text{ G}$  to  $0.7 \text{ G}$   $2\_200 \text{ Hz}$ , during 1 hour, according to IEC 98-2-6 specification.

**CONNECTION ENGINEERING SPECIFICATION:**

Cables definition: slack wire  $600\text{V}-105^\circ\text{C}$ , AWG 22; U.L. style 1213.  
 Connection engineering instruction: IC 1010367

①	White wire mark 1: M21513019 Length 550mm $\pm 10$ mm Cylindrical wire terminal to be staked DZ5 CE 005	⑨	2 blue wires mark 9 and 10: M21513018 Length 300mm $\pm 10$ mm 2 socket contacts to be stacked: SY3CM0142
②	Green wire mark 2: M21513017 Length 550mm $\pm 10$ mm Cylindrical wire terminal to be staked DZ5 CE 005	⑩	2 Red wires mark 11 and 12: M21513020 Length 300mm $\pm 10$ mm 2 socket contacts to be stacked: SY3CM0142
③	Blue wire mark 3: M21513018 Length 550mm $\pm 10$ mm Cylindrical wire terminal to be staked DZ5 CE 005	⑬	6 point socked: SY3CM0149
④	Red wire mark 4: M21513020 Length 550mm $\pm 10$ mm Cylindrical wire terminal to be staked DZ5 CE 005	⑭	2 clips: DZ4DP1002
⑤	Black wire mark 5: M21513020 Length 500mm $\pm 10$ mm Cylindrical wire terminal to be staked DZ5 CE 005	⑮	Yellow/Green ground wire: M21513027 Has to be fixed on one of the assembling screw before soaking
⑥	Black wire mark 6: M21513020 Length 500mm $\pm 10$ mm Cylindrical wire terminal to be staked DZ5 CE 005	⑯	2 BLACK wires mark 16 and 17: M21513022 Length 500mm $\pm 10$ mm 2 socket contacts to be stacked: SY3CM0142
		⑰	
		⑱	5 point socked marked J5: SY3CM0216

Echelle scale	Project project	6JC08	N° note application application memo n°	J10353	DEMARREUR PROGRESSIF - SOFT STARTER Taille 4/5 - size 4/5 TRANSFORMATOR
	Dossier folder	86D4	Date date	12/01/95	A.T.S.4.6. .T.R.A.N.S.F.O..2.7.0.V.A. 5.0./6.0.H
DOCUMENT DE DEFINITION			Etabli par Issued by		RADICAL VU TVFI CD IED FOLIO
<b>Telemecanique</b> GROUPE SCHNEIDER			D. SENOVILLE		<b>149406001 A06 X 04</b> 02/02
					Date du tirage: 09/06/1998 C A D R A 8 Format A3

PARTS LIST SIZE 5

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940350112	A 11	J30688	01/07/98	<b>ATS46C79N PRODUCT ASSEMBLY</b>
DOCUMENT REFERENCE: 149403501A01		IED: 11		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 THICKNESS 2.5	12.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	8.00000	15/12/96		54.
FJPN701EKZCTA	EQUIPPED WIRE	4.00000	15/12/96		56.
FJPR121FFDCDF	EQUIPPED WIRE	18.00000	15/12/96		57.
FJPR501KKTATA	EQUIPPED WIRE	5.00000	15/12/96		58.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		13.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		87.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	80.00000	15/12/96		73.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	32.00000	15/12/96		81.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		90.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		82.
V1110640	SCREW H, M6-40, 6.8 ZNC	8.00000	15/12/96		77.
V1110645	SCREW H, M6-45, 6.8 ZNC	12.00000	15/12/96		76.
V1110680	SCREW H, M6-80, 6.8 ZNC	6.00000	15/12/96		75.
V1111035	SCREW H, M10-35, 6.8 ZNC	22.00000	15/12/96		78.
V12215008	NUT M5, WITH CS INCORP. WASHER	8.00000	15/12/96		70.
V12215010	NUT C TO BE STAKED M10, AC ZNC	6.00000	15/12/96		110.
V12225005	CS TOOTHED WASHER 6, AC ZNC	4.00000	15/12/96		89.
V1320600	NUT H, M6, 6 ZNC	54.00000	15/12/96		71.
V1321000	NUT H, M10, 6 ZNC	31.00000	15/12/96		79.
V1630600	WASHER M, 6, AC ZNC	72.00000	15/12/96		72.
V1631000	WASHER M, 10, AC ZNC	66.00000	15/12/96		80.
W10029122	SPREADER CB L20 D14	12.00000	15/12/96		29.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		105.
W103850870211	EQUIPPED SCREW + - M4-10	4.00000	15/12/96		104.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	15/12/96		91.

W103851350311	EQUIPPED SCREW + - M3-8	42.00000	15/12/96	116.
W10598599	CLAMPING PLATE	18.00000	15/12/96	14.
W114940160111	ATS46 CASING FRONT SIDE T5	1.00000	15/12/96	37.
W20322295001	POLE STRAP LMPR L=97MM	6.00000	15/12/96	3.
W20322295003	POLE STRAP LMPR L=142MM	6.00000	15/12/96	9.
W213025260111	POWER BUS GRAD.//	6.00000	15/12/96	4.
W213025270111	BARRE SELF GRAD. PONT //	2.00000	15/12/96	11.
W213025280111	BARRE SELF CENTR. PONT //	1.00000	15/12/96	10.
W213642710112	ATSC82/M12 OUTPUT IN TINNED COPPER	3.00000	15/12/96	95.
W213643180111	ATS C82/M12 INPUT BAR	6.00000	15/12/96	5.
W213643190111	ATS C82/M12 BAR 40X156	2.00000	15/12/96	6.
W213643200111	ATS C82/M12 BAR 40X173	1.00000	15/12/96	7.
W213643210111	ATS C82/M12 OUTPUT BAR	3.00000	15/12/96	8.
W213643220111	ATS C82/M12 OUTPUT BAR	3.00000	15/12/96	96.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	31.
W414940730511	PRODUCT LABEL ATS46C79N	1.00000	15/12/96	40.
W414940750112	LABEL ALTISTART 46 T5	1.00000	01/03/98	107.
W51265269	POWER OUTPUT BASE PLATE	6.00000	15/12/96	30.
W803857500511	JC08 INTERFACE C79 PO PWB	1.00000	15/12/96	38.
W805993450111	ELECTRIC BALANCE COIL //	3.00000	15/12/96	12.
W813027300411	SUB ASSY RACK 900A.1600V. *	6.00000	15/12/96	2.
W813027301111	SUB ASSY RACK 900A 1600V SKT	6.00000	15/12/96	2.
W813109240211	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	53.
W813110270212	C IGNITER PROTECTION 380/500V	6.00000	15/12/96	28.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	35.
W813642640511	ATS23 C IGNITER COUPLING/J7	1.00000	15/12/96	50.
W813642640711	ATS23 C IGNITER COUPLING/J6	1.00000	15/12/96	47.
W813642640911	ATS46 C IGNITER COUPLING/J9	1.00000	15/12/96	51.
W813642641011	ATS46 C IGNITER COUPLING/J8	1.00000	15/12/96	48.
W813642641111	ATS46 C IGNITER COUPLING/J4	1.00000	15/12/96	46.
W813642641211	ATS46 C IGNITER COUPLING/J5	1.00000	15/12/96	49.
W813643630111	ATS23 C82/M12 EARTH MARKING *	1.00000	15/12/96	32.
W814940120111	ASSY ON G & D SIDES T4	1.00000	15/12/96	36.
W814940420111	ATS46 C79/M12 HOUSING PRE	1.00000	15/12/96	1.

W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	52.
W814940600112	TRANSFORMER 120VA 225-390/475V	2.00000	01/07/98	15.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	33.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	43.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	43A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	45.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	45A.
W814940860711	ATS46 T5 CABLE BUNDLE J31	1.00000	15/12/96	44.
W814940860811	ATS46 T5 CABLE BUNDLE J32	1.00000	15/12/96	44A.
W814941160111	INPUT FRONT SIDE FINISHED T5	2.00000	15/12/96	61.
W90364819	WHITE LABEL 13X6,5	2.00000	15/12/96	42.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	39-108.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	15/12/96	115.
W914941011111	LABEL V11A	1.00000	15/12/96	16.
W914941011211	LABEL V12A	1.00000	15/12/96	17.
W914941011311	LABEL V13A	1.00000	15/12/96	18.
W914941011411	LABEL V14A	1.00000	15/12/96	19.
W914941011511	LABEL V15A	1.00000	15/12/96	20.
W914941011611	LABEL V16A	1.00000	15/12/96	21.
W914941012111	LABEL V11B	1.00000	15/12/96	22.
W914941012211	LABEL V12B	1.00000	15/12/96	23.
W914941012311	LABEL V13B	1.00000	15/12/96	24.
W914941012411	LABEL V14B	1.00000	15/12/96	25.
W914941012511	LABEL V15B	1.00000	15/12/96	26.
W914941012611	LABEL V16B	1.00000	15/12/96	27.
W914941150111	MARKING LABEL.34X15 MM	2.00000	15/12/96	41.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	111.
FIN D EXPLOSION				



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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940350212	A 11	J30688	01/07/98	<b>ATS46M10N PRODUCT ASSEMBLY</b>
DOCUMENT REFERENCE: 149403502A01		IED: 11		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 EP2.5	20.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	8.00000	15/12/96		54.
FJPN701EKZCTA	EQUIPPED WIRE	4.00000	15/12/96		56.
FJPR121FFDCDF	EQUIPPED WIRE	18.00000	15/12/96		57.
FJPR501KKTATA	EQUIPPED WIRE	5.00000	15/12/96		58.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		13.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		87.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	80.00000	15/12/96		73.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	32.00000	15/12/96		81.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		90.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		82.
V1110640	SCREW H, M6-40, 6.8 ZNC	8.00000	15/12/96		77.
V1110645	SCREW H, M6-45, 6.8 ZNC	12.00000	15/12/96		76.
V1110680	SCREW H, M6-80, 6.8 ZNC	6.00000	15/12/96		75.
V1111035	SCREW H, M10-35, 6.8 ZNC	22.00000	15/12/96		78.
V12215008	NUT M5, WITH CS INCORP. WASHER	8.00000	15/12/96		70.
V12215010	NUT C TO BE STAKED M10, AC ZNC	6.00000	15/12/96		110.
V12225005	CS TOOTHED WASHER. 6, AC ZNC	4.00000	15/12/96		89.
V1320600	NUT H, M6, 6 ZNC	54.00000	15/12/96		71.
V1321000	NUT H, M10, 6 ZNC	31.00000	15/12/96		79.
V1630600	WASHER M, 6, AC ZNC	72.00000	15/12/96		72.
V1631000	WASHER M, 10, AC ZNC	66.00000	15/12/96		80.
W10029122	SPREADER CB L20 D14	12.00000	15/12/96		29.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		105.
W103850870211	EQUIPPED SCREW + - M4-10	4.00000	15/12/96		104.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	15/12/96		91.

W103851350311	EQUIPPED SCREW + - M3-8	42.00000	15/12/96	116.
W10598599	CLAMPING PLATE	18.00000	15/12/96	14.
W114940160111	ATS46 CASING FRONT SIDE T5	1.00000	15/12/96	37.
W20322295001	POLE STRAP LMPR L=97MM	6.00000	15/12/96	3.
W20322295003	POLE STRAP LMPR L=142MM	6.00000	15/12/96	9.
W213025260111	POWER BUS GRAD.//	6.00000	15/12/96	4.
W213025270111	BARRE SELF GRAD. PONT //	2.00000	15/12/96	11.
W213025280111	BARRE SELF CENTR. PONT //	1.00000	15/12/96	10.
W213642710112	ATSC82/M12 OUTLET IN TINNED COPPER	3.00000	15/12/96	95.
W213643180111	ATS C82/M12 INPUT BAR	6.00000	15/12/96	5.
W213643190111	ATS C82/M12 BAR 40X156	2.00000	15/12/96	6.
W213643200111	ATS C82/M12 BAR 40X173	1.00000	15/12/96	7.
W213643210111	ATS C82/M12 OUTPUT BAR	3.00000	15/12/96	8.
W213643220111	ATS C82/M12 OUTPUT BAR	3.00000	15/12/96	96.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	31.
W414940730611	PRODUCT LABEL ATS46M10N	1.00000	15/12/96	40.
W414940750112	LABEL ALTISTART 46 T5	1.00000	01/03/98	107.
W51265269	POWER OUTPUT BASE PLATE	6.00000	15/12/96	30.
W803857500611	JC08 INTERFACE M10 PO PWB	1.00000	15/12/96	38.
W805993450111	ELECTRIC BALANCE COIL //	3.00000	15/12/96	12.
W813027300711	SUB ASSY RACK 1200A.1600V. *	6.00000	15/12/96	2.
W813027301311	SUB ASSY RACK 1200A.1600V. *	6.00000	01/03/98	2.
W813109240211	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	53.
W813110270212	C IGNITER PROTECTION 380/500V	6.00000	15/12/96	28.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	35.
W813642640511	ATS23 C IGNITER COUPLING J7	1.00000	15/12/96	50.
W813642640711	ATS23 C IGNITER COUPLING /J6	1.00000	15/12/96	47.
W813642640911	ATS46 C IGNITER COUPLING/J9	1.00000	15/12/96	51.
W813642641011	ATS46 C IGNITER COUPLING/J8	1.00000	15/12/96	48.
W813642641111	ATS46 C IGNITER COUPLING/J4	1.00000	15/12/96	46.
W813642641211	ATS46 C IGNITER COUPLING/J5	1.00000	15/12/96	49.
W813643630111	ATS23 C82/M12 EARTH MARKING *	1.00000	15/12/96	32.
W814940120111	ASSY ON G & D SIDES T4	1.00000	15/12/96	36.
W814940420111	ATS46 C79/M12 HOUSING PRE	1.00000	15/12/96	1.

W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	52.
W814940600112	TRANSFORMER 120VA 225-390/475V	2.00000	01/07/98	15.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	33.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	43.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	43A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	45.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	45A.
W814940860711	ATS46 T5 CABLE BUNDLE J31	1.00000	15/12/96	44.
W814940860811	ATS46 T5 CABLE BUNDLE J32	1.00000	15/12/96	44A.
W814941160111	INPUT FRONT SIDE FINISHED T5	2.00000	15/12/96	61.
W90364819	WHITE LABEL 13X6,5	2.00000	15/12/96	42.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	39-108.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	15/12/96	115.
W914941011111	LABEL V11A	1.00000	15/12/96	16.
W914941011211	LABEL V12A	1.00000	15/12/96	17.
W914941011311	LABEL V13A	1.00000	15/12/96	18.
W914941011411	LABEL V14A	1.00000	15/12/96	19.
W914941011511	LABEL V15A	1.00000	15/12/96	20.
W914941011611	LABEL V16A	1.00000	15/12/96	21.
W914941012111	LABEL V11B	1.00000	15/12/96	22.
W914941012211	LABEL V12B	1.00000	15/12/96	23.
W914941012311	LABEL V13B	1.00000	15/12/96	24.
W914941012411	LABEL V14B	1.00000	15/12/96	25.
W914941012511	LABEL V15B	1.00000	15/12/96	26.
W914941012611	LABEL V16B	1.00000	15/12/96	27.
W914941150111	MARKING LABEL 34X15 MM	2.00000	15/12/96	41.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	111.
FIN D EXPLOSION				

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814940350312	A 11	J30688	01/07/98	<b>ATS46M12N PRODUCT ASSEMBLY</b>
DOCUMENT REFERENCE: 149403503A01		IED: 11		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
DZ4DP1002	NYLON CABLE CLAMP D32 EP2.5	20.00000	15/12/96		
FJPN501EEZCZC	EQUIPPED WIRE	8.00000	15/12/96		54.
FJPN701EKZCTA	EQUIPPED WIRE	4.00000	15/12/96		56.
FJPR121FFDCDF	EQUIPPED WIRE	18.00000	15/12/96		57.
FJPR501KKTATA	EQUIPPED WIRE	5.00000	15/12/96		58.
SZ1FC0023	TI 2000/0.5A 5VA CL3	2.00000	15/12/96		13.
REPLACES:	OLD: J921202				
V10RC2042	MEDIUM CS WASHER 4-10, AC ZNC	4.00000	15/12/96		87.
V10RC2062	MEDIUM CS WASHER 6-14, AC ZNC	80.00000	15/12/96		73.
V10RC2102	MEDIUM CS WASHER 10-22, AC ZNC	32.00000	15/12/96		81.
V10VC710610	SCREW CBL Z, M6-10, 5.8 ZNB	4.00000	15/12/96		90.
V1110410	SCREW H, M4-10, 6.8 ZNC	4.00000	15/12/96		82.
V1110640	SCREW H, M6-40, 6.8 ZNC	8.00000	15/12/96		77.
V1110645	SCREW H, M6-45, 6.8 ZNC	12.00000	15/12/96		76.
V1110680	SCREW H, M6-80, 6.8 ZNC	6.00000	15/12/96		75.
V1111035	SCREW H, M10-35, 6.8 ZNC	22.00000	15/12/96		78.
V12215008	NUT M5,WITH CS INCORP. WASHER	8.00000	15/12/96		70.
V12215010	NUT C TO BE STAKED M10, AC ZNC	6.00000	15/12/96		110.
V12225005	CS TOOTHED WASHER. 6, AC ZNC	4.00000	15/12/96		89.
V1320600	NUT H, M6, 6 ZNC	54.00000	15/12/96		71.
V1321000	NUT H, M10, 6 ZNC	31.00000	15/12/96		79.
V1630600	WASHER M, 6, AC ZNC	72.00000	15/12/96		72.
V1631000	WASHER M, 10, AC ZNC	66.00000	15/12/96		80.
W10029122	SPREADER CB L20 D14	12.00000	15/12/96		29.
W10274587	SHAKEPROOF WASHER SCREW AF1VA612	6.00000	15/12/96		105.
W103850870211	EQUIPPED SCREW + - M4-10	4.00000	15/12/96		104.
W103851350111	EQUIPPED SCREW + - M3-10	3.00000	15/12/96		91.

W103851350311	EQUIPPED SCREW + - M3-8	42.00000	15/12/96	116.
W10598599	CLAMPING PLATE	18.00000	15/12/96	14.
W114940160111	ATS46 CASING FRONT SIDE T5	1.00000	15/12/96	37.
W20322295001	POLE STRAP LMPR L=97MM	6.00000	15/12/96	3.
W20322295003	POLE STRAP LMPR L=142MM	6.00000	15/12/96	9.
W213025260111	POWER BUS GRAD.//	6.00000	15/12/96	4.
W213025270111	BARRE SELF GRAD. PONT //	2.00000	15/12/96	11.
W213025280111	BARRE SELF CENTR. PONT //	1.00000	15/12/96	10.
W213642710112	ATSC82/M12 OUTLET IN TINNED COPPER	3.00000	15/12/96	95.
W213643180111	ATS C82/M12 INPUT BAR	6.00000	15/12/96	5.
W213643190111	ATS C82/M12 BARRE 40X156	2.00000	15/12/96	6.
W213643200111	ATS C82/M12 BARRE 40X173	1.00000	15/12/96	7.
W213643210111	ATS C82/M12 OUTPUT BAR	3.00000	15/12/96	8.
W213643220111	ATS C82/M12 OUTPUT BAR	3.00000	15/12/96	96.
W413642170111	ATS/RTV/STV SET OF STICKERS FOR BARS	1.00000	15/12/96	31.
W414940730711	PRODUCT LABEL ATS46M12N	1.00000	15/12/96	40.
W414940750112	LABEL ALTISTART 46 T5	1.00000	01/03/98	107.
W51265269	POWER OUTPUT BASE PLATE	6.00000	15/12/96	30.
W803857500711	JC08 INTERFACE M12 PO PWB	1.00000	15/12/96	38.
W805993450111	ELECTRIC BALANCE COIL //	3.00000	15/12/96	12.
W813027300711	SUB ASSY RACK 1200A.1600V. *	6.00000	15/12/96	2.
W813027301311	SUB ASSY RACK 1200A.1600V. *	6.00000	01/03/98	2.
W813109240211	VIGITHERM COUPLING C/MEASURE *	1.00000	15/12/96	53.
W813110270212	C IGNITER PROTECTION 380/500V	6.00000	15/12/96	28.
W813110830411	ATS46 FILTER CARD T3/T5	3.00000	15/12/96	35.
W813642640511	ATS23 C IGNITER COUPLING J7	1.00000	15/12/96	50.
W813642640711	ATS23 C IGNITER COUPLING /J6	1.00000	15/12/96	47.
W813642640911	ATS46 C IGNITER COUPLING/J9	1.00000	15/12/96	51.
W813642641011	ATS46 C IGNITER COUPLING/J8	1.00000	15/12/96	48.
W813642641111	ATS46 C IGNITER COUPLING/J4	1.00000	15/12/96	46.
W813642641211	ATS46 C IGNITER COUPLING/J5	1.00000	15/12/96	49.
W813643630111	ATS23 C82/M12 EARTH MARKING *	1.00000	15/12/96	32.
W814940120111	ASSY ON G & D SIDES T4	1.00000	15/12/96	36.
W814940420111	ATS46 C79/M12 HOUSING PRE	1.00000	15/12/96	1.

W814940550111	SUB ASSY CABLE BUNDLE TI T4/T5 J43	1.00000	01/03/98	52.
W814940600112	TRANSFORMER 120VA 225-390/475V	2.00000	01/07/98	15.
W814940850112	ATS46 SUB ASSY CONTROL FINISHED	1.00000	15/12/96	33.
REPLACES:	OLD: W814940850111			
W814940860111	ATS46 T4/5 CABLE BUNDLE J11	1.00000	15/12/96	43.
W814940860211	ATS46 T4/5 CABLE BUNDLE J12	1.00000	15/12/96	43A.
W814940860311	ATS46 T4/5 CABLE BUNDLE J21	1.00000	15/12/96	45.
W814940860411	ATS46 T4/5 CABLE BUNDLE J22	1.00000	15/12/96	45A.
W814940860711	ATS46 T5 CABLE BUNDLE J31	1.00000	15/12/96	44.
W814940860811	ATS46 T5 CABLE BUNDLE J32	1.00000	15/12/96	44A.
W814941160111	INPUT FRONT SIDE FINISHED T5	2.00000	15/12/96	61.
W90364819	WHITE LABEL 13X6,5	2.00000	15/12/96	42.
W913643040121	LABEL TE 100X67 (ALUMINIUM)	2.00000	01/03/98	39-108.
W913643370111	ROUND STICKER FOR EARTH SYMBOL 20	1.00000	15/12/96	115.
W914941011111	LABEL V11A	1.00000	15/12/96	16.
W914941011211	LABEL V12A	1.00000	15/12/96	17.
W914941011311	LABEL V13A	1.00000	15/12/96	18.
W914941011411	LABEL V14A	1.00000	15/12/96	19.
W914941011511	LABEL V15A	1.00000	15/12/96	20.
W914941011611	LABEL V16A	1.00000	15/12/96	21.
W914941012111	LABEL V11B	1.00000	15/12/96	22.
W914941012211	LABEL V12B	1.00000	15/12/96	23.
W914941012311	LABEL V13B	1.00000	15/12/96	24.
W914941012411	LABEL V14B	1.00000	15/12/96	25.
W914941012511	LABEL V15B	1.00000	15/12/96	26.
W914941012611	LABEL V16B	1.00000	15/12/96	27.
W914941150111	MARKING LABEL.34X15 MM	2.00000	15/12/96	41.
1ACE003055	WIRE BUNDLE CLIP 5.1-7.6	2.00000	01/07/98	111.
FIN D EXPLOSION				

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SYMBOL	ITEM	NOTE NBR	IMPL DATE	COMPONENT DESIGNATION
W814941020911	A 05	J30333	18/04/97	<b>KIT PACK WIRING T5</b>
DOCUMENT REFERENCE: 149410209A01		IED: 06		

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COMPONENT	COMPONENT DESIGNATION	QUANTITY	VALIDITY START DATE	VALIDITY END DATE	TOPOLOGIC REFERENCES
M93731035	TRANSPARENT PE SLEEVE E90M L240	0.01500	04/11/96		4.
REPLACES:	OLD: J940702				
VD0C32Q301	GE ATS 46	1.00000	04/11/96		14.
W808780220111	M12 BOLTS PACK	9.00000	04/11/96		7.
W813819520111	TIME RELAY OUTPUT CONNECTOR	1.00000	04/11/96		1.
W813819530111	CONN.CONT TAMPOGRAPHIE	1.00000	04/11/96		2.
W914941150111	MARKING LABEL 34X15 MM	1.00000	18/04/97		3.
FIN D EXPLOSION					

**Altistart - Transformation from ATS-23 to ATS-46**



# Altistart - Converting an ATS-23 to an ATS-46

This conversion must always be performed by Schneider Electric service structure. The time taken to perform the conversion is approximately two hours, to which site transfer time must be added.

A mechanical kit, a VX4G461 control module and the appropriate measurement card corresponding to the power of the motor to be started are necessary for the conversion. For on-site work, a communication interface must be available for adjustment, when required. The table below gives the detailed product references of the equipment necessary, according to the power of the motor (in the case of normal duty).

Note :

This conversion can only be performed on products dated later than the following weeks :

- 24.92 for the ATS-23C24N (and Q) and ATS-23C30N (and Q),

- 14.93 for the ATS-23C41N to 23M12N.

There were generally no more (Q) products at that date.

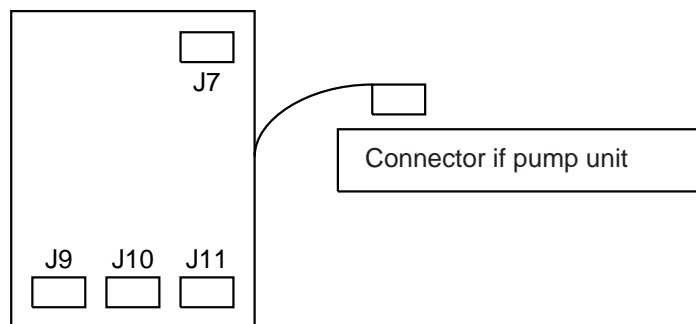
ALTISTART 23 reference	ALTISTART 46 reference	Power at 400 V kW	Mechanical kit reference	Control module reference	Rating card reference
ATS-23C24N	ATS-46C17N	90	VY1G461103	VX4G461	VX4G46111
ATS-23C24N	ATS-46C21N	110	VY1G461103	VX4G461	VX4G46112
ATS-23C24N	ATS-46C25N	132	VY1G461103	VX4G461	VX4G46113
ATS-23C30N	ATS-46C32N	160	VY1G461103	VX4G461	VX4G46114
ATS-23C41N	ATS-46C41N	220	VY1G461104	VX4G461	VX4G46115
ATS-23C58N	ATS-46C48N	250	VY1G461104	VX4G461	VX4G46116
ATS-23C58N	ATS-46C59N	315	VY1G461104	VX4G461	VX4G46117
ATS-23C82N	ATS-46C66N	355	VY1G461105	VX4G461	VX4G46118
ATS-23C82N	ATS-46C79N	400	VY1G461105	VX4G461	VX4G46119
ATS-23M12N	ATS-46M10N	500	VY1G461105	VX4G461	VX4G46120
ATS-23M12N	ATS-46M12N	630	VY1G461105	VX4G461	VX4G46121

# Conversion instructions for size 3

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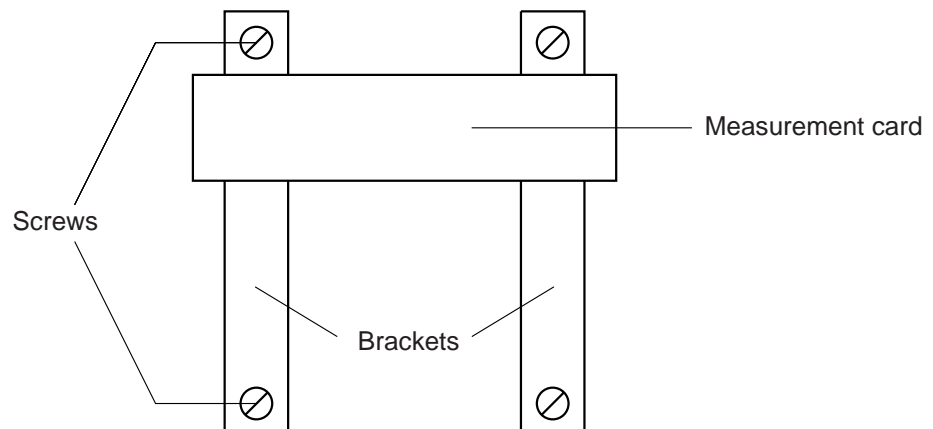
## Dismantling the Altistart 23

- 1 - Remove the four screws holding the front cover.
- 2 - Remove the customer terminal block.
- 3 - Use a flat screwdriver to remove the four screws attaching the control module of the Altistart.
- 4 - Unplug connectors J7, J9, J10 and J11 located at the rear of the control module and those located on the measurement card. There may be a 5th connector if this is a pump unit. The pump transformer must be removed.



rear view of the control module

- 5 - Remove the connectors from the vigitherm and the current transformers.
- 6 - Remove the four screws attaching the two brackets using a flat screwdriver and a 7 mm spanner.

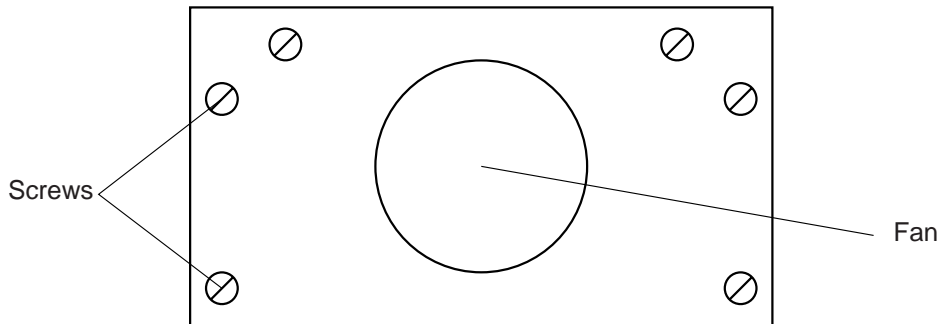


- 7 - Remove the fan cover (two screws with a 7 mm spanner).
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# Conversion instructions for size 3

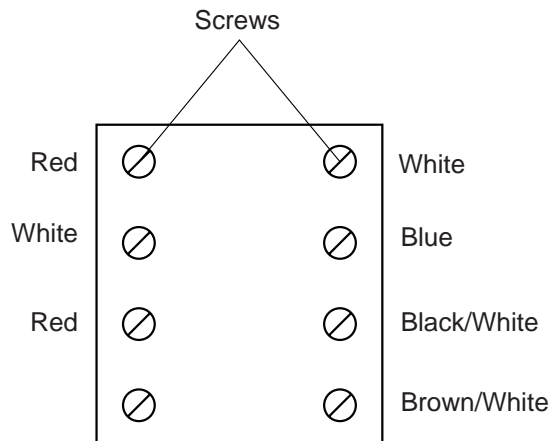
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8 - Remove the six screws from the fan mounting plate.



view from above

9 - Disconnect the two power supply wires (from the transformer) from the fan (black wire with white cable end).



view of terminal block from above (colour of cable ends)

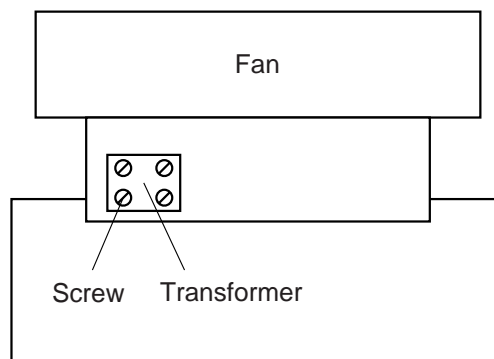
10 - Remove the wires one by one through the appropriate cable entry.

11 - Unscrew the transformer power supply wires.



diagram of the customer terminal block

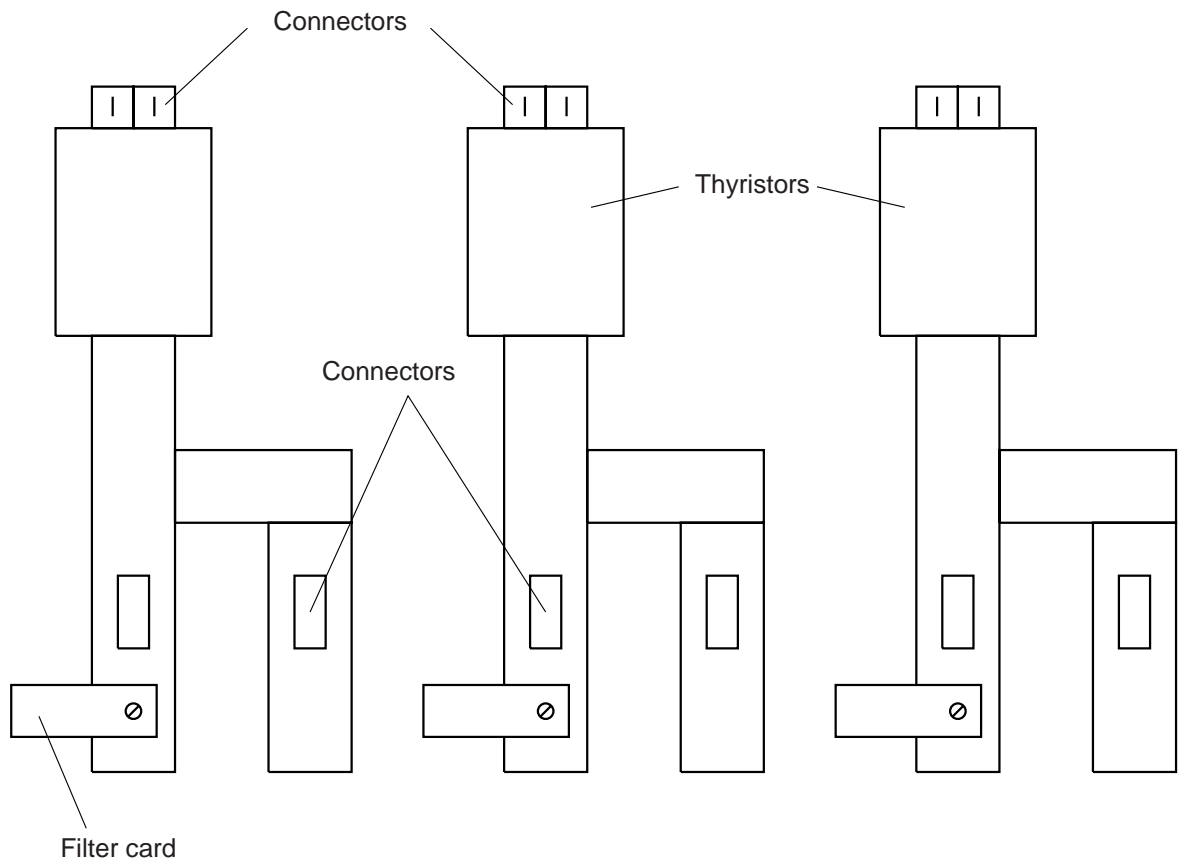
12 - Remove the four screws attaching the transformer (no. 3 Allen key).



# Conversion instructions for size 3

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13- Remove the thyristor cables.



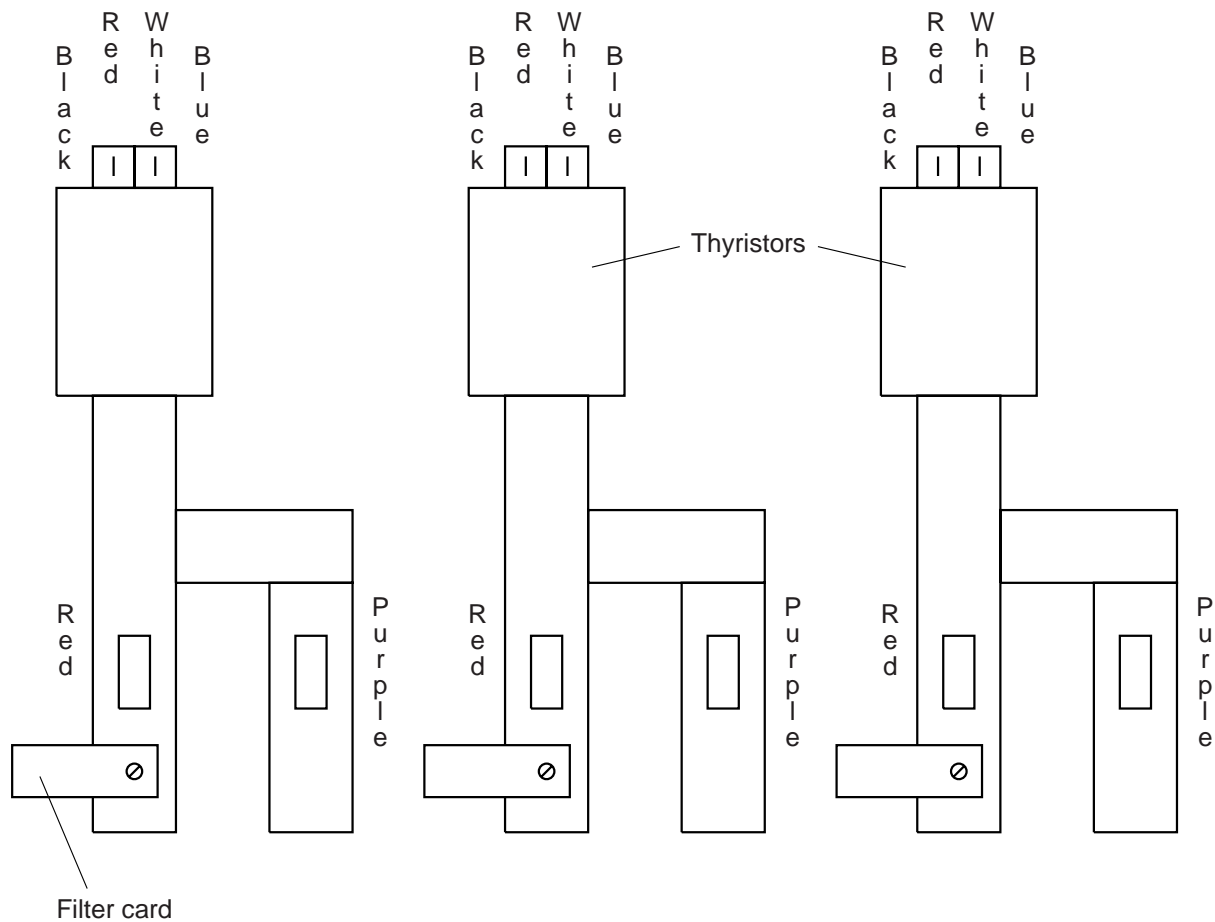
14- Disconnect the filter cards (do not remove them from the busbars). Remove the connectors located at the base of the product.

## Reassembling as an Altistart 46

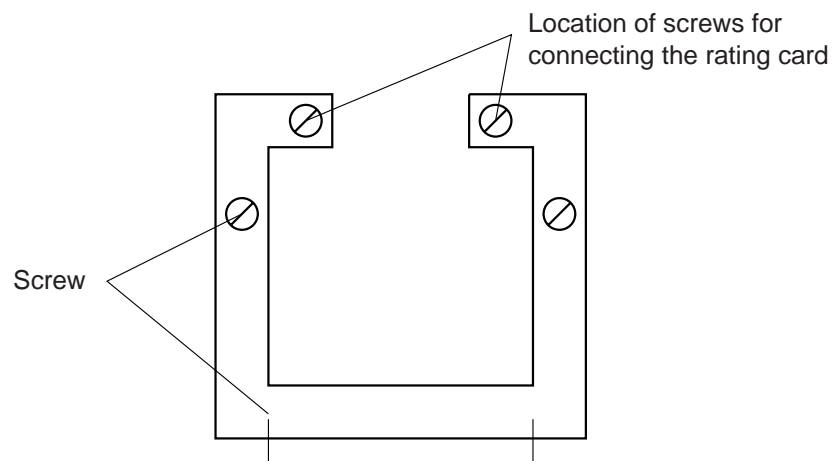
- 1 - Reattach the transformer using the four fixing screws, with the cabling on the left-hand side of the unit.
  - 2 - Reinsert the fan power supply cables (black cables with white cable ends) through the appropriate cable entry.
  - 3 - Replace the six screws attaching the fan.
  - 4 - Replace the two wires in the connector (see diagram for instruction 9 for dismantling the Altistart 23) and replace the fan cover.
  - 5 - Reposition the transformer power supply cables in the connector at the base of the unit (diagram showing the location of the wires in procedure 11 for dismantling the Altistart 23).
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# Conversion instructions for size 3

6 - Reconnect the thyristor connectors.



7 - Install the metal support. Insert all the wires through the centre of the bracket. Position the four screws which attach this part.

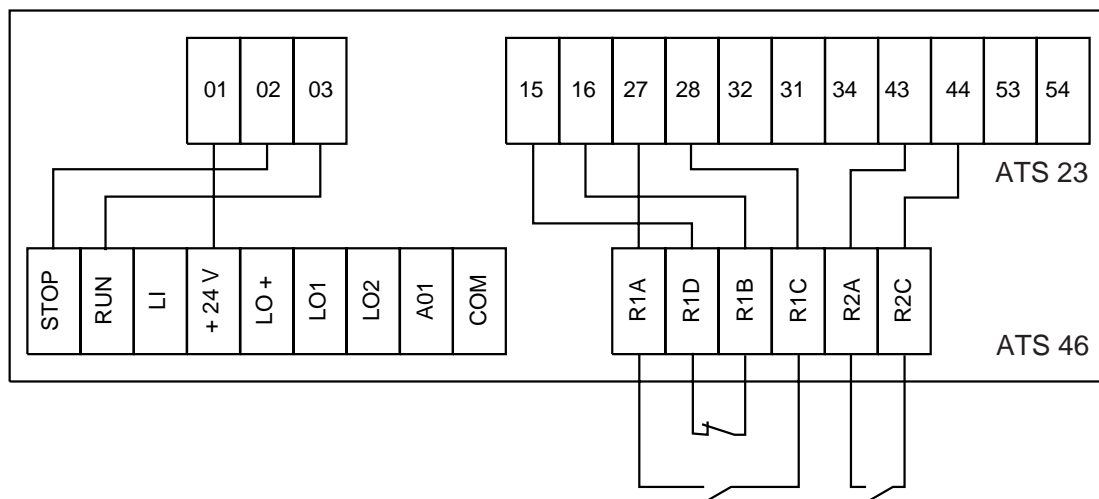


8 - Reconnect the rating card of the kit. Place it at the top of the bracket, in the correct location. Care should be taken to ensure that this card is positioned correctly, placing the connectors towards the top of the unit.  
Replace connectors J13 and J14 from the current transformers on the rating card.  
If the cables are too short, use the TI ribbon cable which is part of the kit. Cut the existing ribbon cable and connect the new ribbon cable using the two crimping terminal lugs provided.

## Conversion instructions for size 3

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- 9 - Install the connectors in the locations behind the control module of the Altistart according to the markings.
- 10- Replace the four control module screws. **Care should be taken not to pinch the wires when reassembling this part.**
- 11- Wire the customer terminal block on the ATS 46 observing the ATS 23 → 46 interconnections.

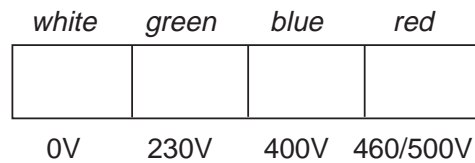


# Conversion instructions for sizes 4 and 5

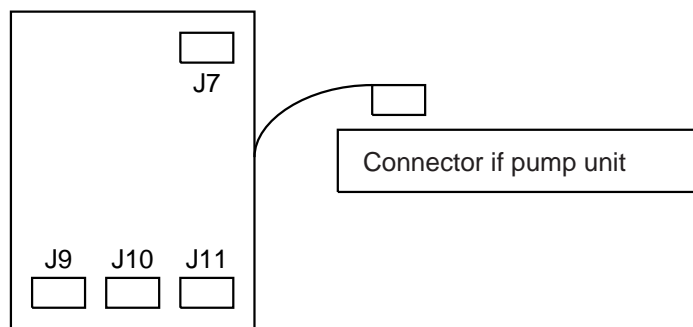
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## Dismantling the Altistart 23

- 1 - Remove the cover by unscrewing 4 fixing screws.
- 2 - Disconnect the 13 connectors on the interface card (VX4-G23117) for a size 5 ATS, and the 10 connectors for a size 4 ATS.
- 3 - Unscrew the connection screws on the power supply terminal block using a small flat screwdriver.



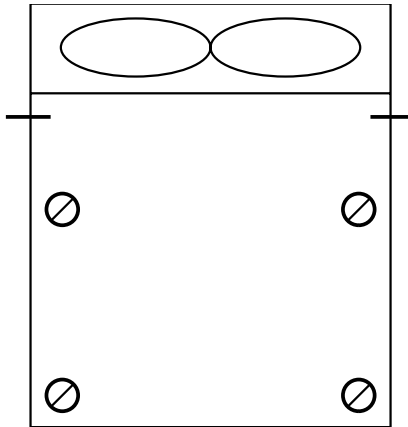
- 4 - Unplug the control connectors from the ATS (J7 - J9 - J10 - J11).
- 5 - Remove the control subassembly by unscrewing the 4 fixing screws and disconnecting the 4 cables located at the rear of the control module. There may be a 5th connector if this is a pump unit. The pump transformer must be removed.



# Conversion instructions for sizes 4 and 5

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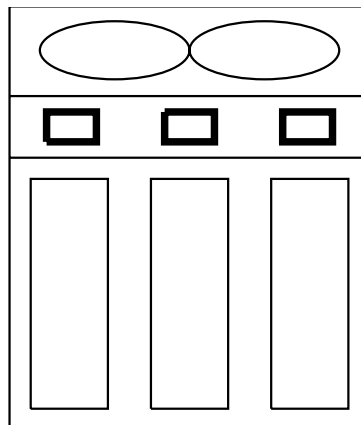
6 - Loosen the fixing screws of the metal support.



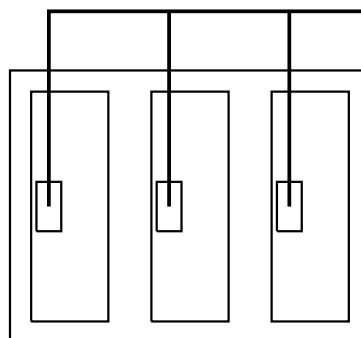
7 - Pivot the metal support upwards, cut the plastic clamp holding the wiring.

8 - Remove the metal support and finish cutting all the clamps.

9 - Remove the cable by unclipping the clips.



10- Remove cables J4 - J6 - J8 for a size 4 unit, and for a size 5 unit also remove J5 - J7 - J9.

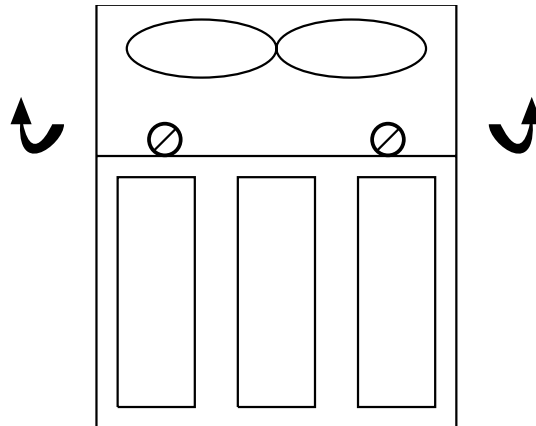




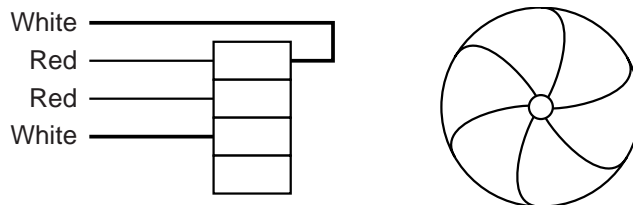
# Conversion instructions for sizes 4 and 5

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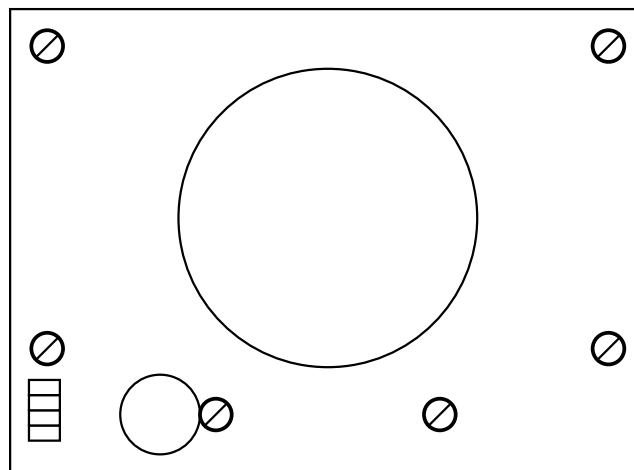
- 11- Remove the fan grille by tilting it backwards after first loosening the screws on the front (7 mm open-ended spanner).



- 12- Disconnect the 2 wires with white cable ends on the fan terminal block.



- 13- Remove the fan turbine by removing the 6 fixing screws (8 mm spanner).

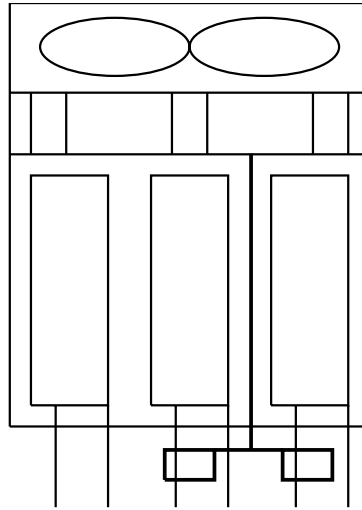


- 14- Remove the 2 wires from the transformer to the fan 1 by 1 retaining the sheath for carrying the wires on the turbine side.  
Remove the transformer by unscrewing the CHC screws using a 4 mm Allen key. For units with two transformers only the right-hand transformer (viewing the unit from the front) is to be removed.
-

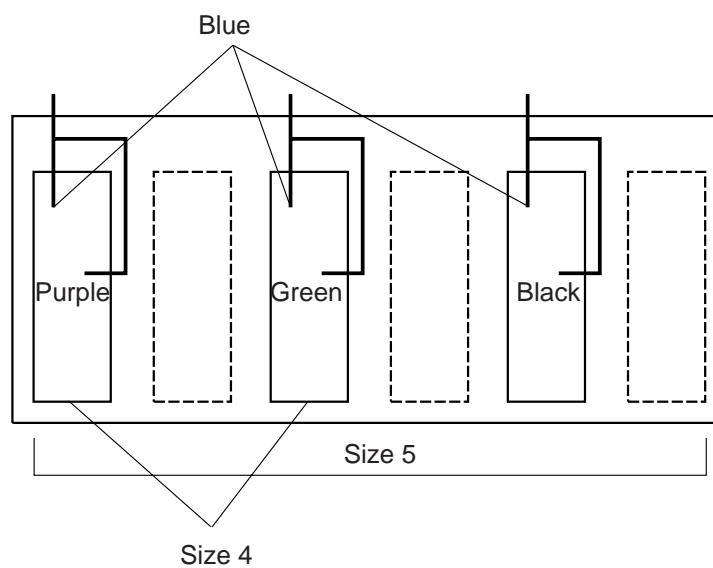
# Conversion instructions for sizes 4 and 5

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- 15- Remove the cable from the current transformers by cutting the clamps and unscrewing the connection screws on the transformers. Note the location and colour of the wires (red wires on Q1 : black wires on Q2).



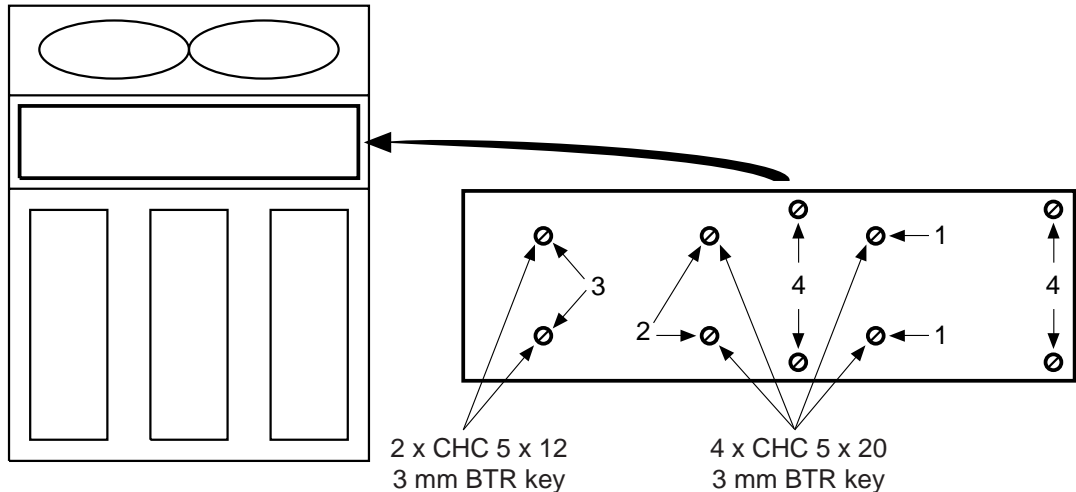
- 16- Disconnect cables J9 - J10 - J11 from the plug-in power units on the control module.



# Conversion instructions for sizes 4 and 5

## Reassembling as an Altistart 46

- 1 - Mount the "transformer and card" support (provided in the kit) in the place previously occupied by the old transformer mounting.



Mounting the "transformer and card" support.

a - Attach the plate using two CHC 5 x 20 screws at the locations marked 1.

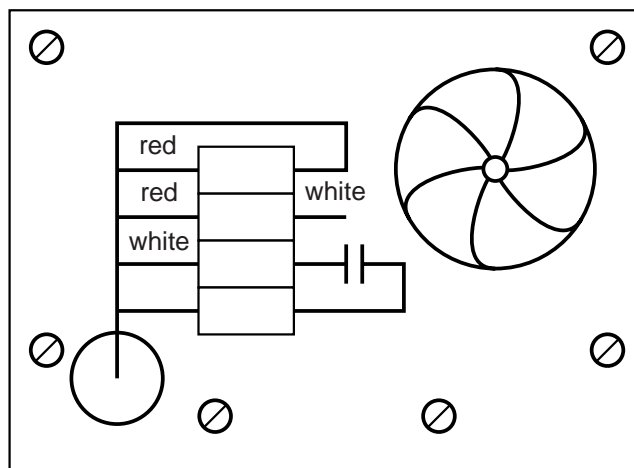
b - Attach the transformer using two 5 x 20 screws at the locations marked 2 and two 5 x 12 screws at the locations marked 3.

Observe the orientation of the transformer, placing the cable with connector on the right-hand side when viewing the unit from the front with the transformer fitted on the plate.

c - Attach the card using four 4 x 10 screws at the locations marked 4 placing the cables on the right.

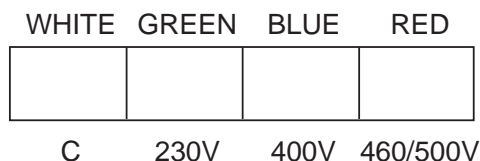
### 2 - Wiring the transformer :

- Connect the cable from the right of the transformer (2 blue wires and 2 red wires) to J 41 on the electronic card,
- On the left-hand side of the transformer insert the 2 black wires with white cable ends through the cable gland and the sheath towards the fan,
- Attach the fan using its 6 screws,
- Connect it according to the diagram below,
- Refit the fan grille, first placing the rear of the grille in the fixings then retightening the 2 screws on the front.



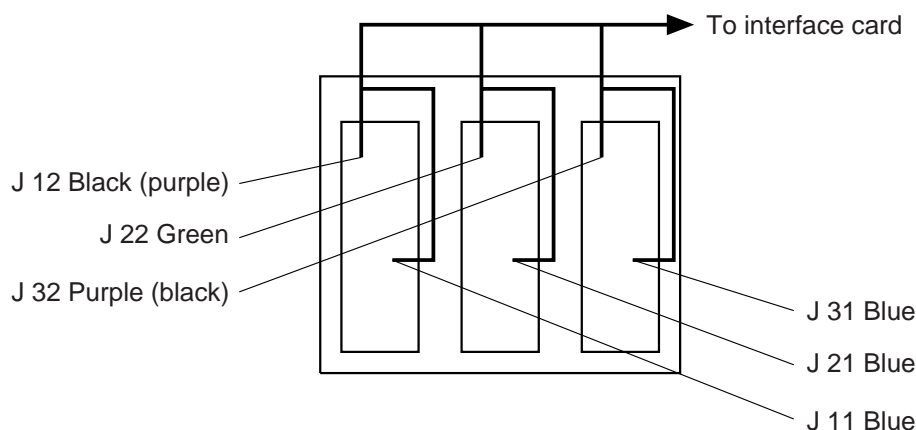
# Conversion instructions for sizes 4 and 5

- 3 - Reposition the control support, lift it up in order to insert the transformer wires through the cable gland. Move the terminal block if an ATS-46C79, 46M10N or 46M12N. Lower the support to connect the 4 or 8 wires to the connector in accordance with the diagram.



- 4 - Wiring cables J 11 - J 12 - J 21 - J 22 - J 31 - J 32.

Connect the cables to the plug-in units according to the following drawing.



**Caution : The position of the blue wires is different on an ATS-23.**

The wiring is identical for a starter with 6 plug-in units, except that only every other unit is wired.

For wiring J12 and J32 use long cables with connectors so that they can be connected to the plug-in unit furthest to the left of the starter. This only applies to ATS-46C79, 46M10N, 46M12N.

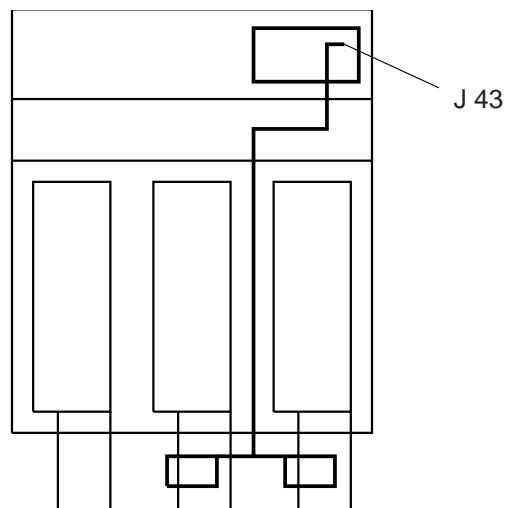
Strip the wire and insert it in the clips. Connect the cables to the electronic card observing the labelling and connecting the connectors with 2 wires to the card.

- 5 - Current transformer cable (2 BLACK/RED twisted pairs with a 4-pin connector).

Connect the 2 current transformers observing the twisted pairs and connecting the BLACK wire to Q2 and the RED wire to Q1 on each transformer.

Run the cable to the penultimate right-hand plug-in unit for a size 4 starter or to the centre of the starter for a size 5. Attach the assembly with plastic clamps in the appropriate locations.

Connect the connector of the current transformer cable to J 43 on the electronic card, observing the wire coding.

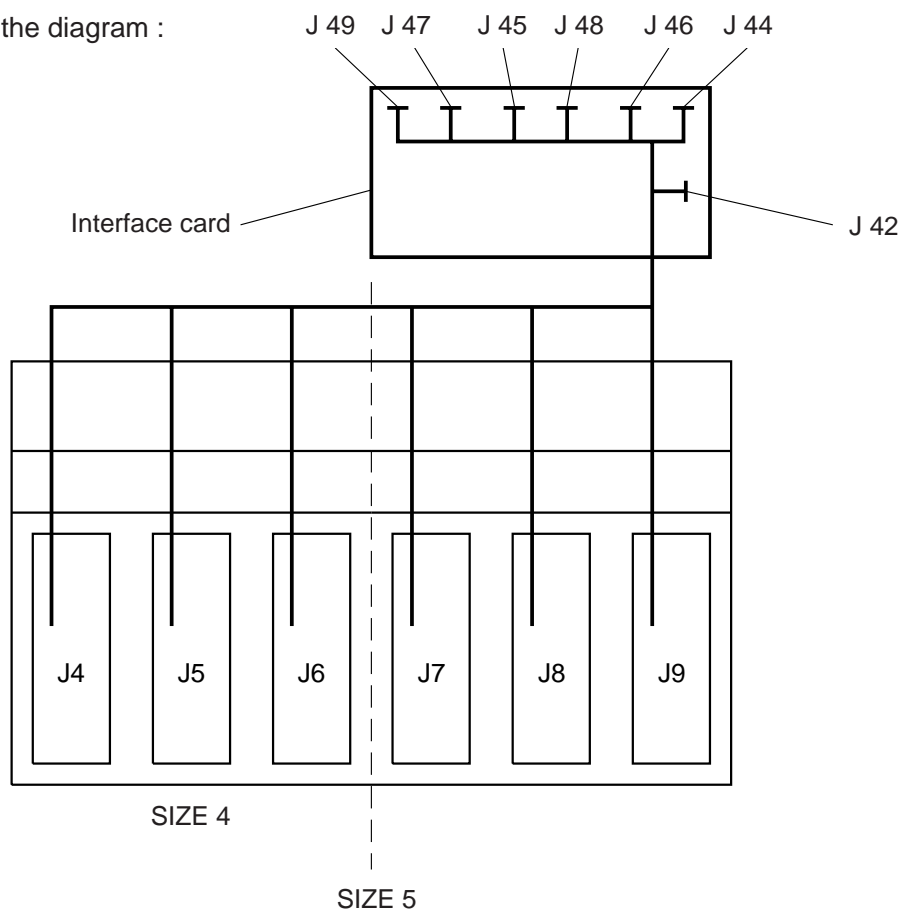


# Conversion instructions for sizes 4 and 5

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6 - Wiring the control cables of thyristors J4 to J9.

Follow the diagram :



Connect J 4 to J 44 ; J 5 to J 45 ; J 6 to J 46 ; J 7 to J 47 ; J 8 to J 48 ; J 9 to J 49 on the electronic card. Use the fixing points to run the cables along the insulating dividers and connect up to the clips. Connect the cable with 2 red wires to J42 on the electronic card.

7 - Lower the metal support and attach the control module on top.

8 - Lift the metal support in order to connect the connector with 2 black wires from the left-hand side of the transformer to J 5 on the card,  
connect cables J 4 and J 3 on the electronic card to the control module at the appropriate locations,  
connect the cables with 3 wires to connectors J11 - J12 - J21 - J22 - J31 - J32,  
lower the metal support and attach it using the fixing screws,  
place the cover on the unit.

9 - Conversion complete.

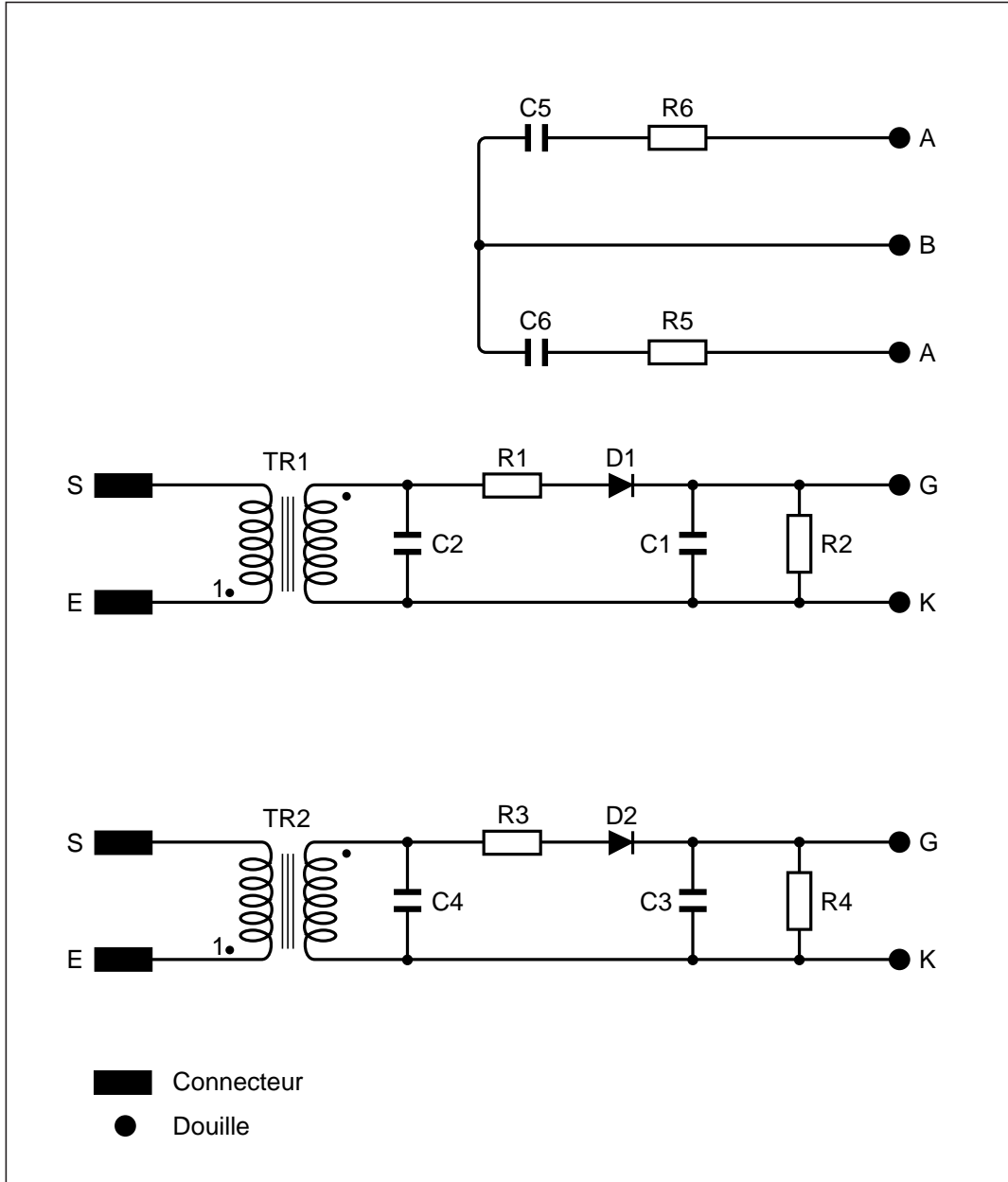
Please refer to page 7 for the wiring of the customer terminal block.

10 - Start up the Altistart 46.

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**IGNITER CARD**

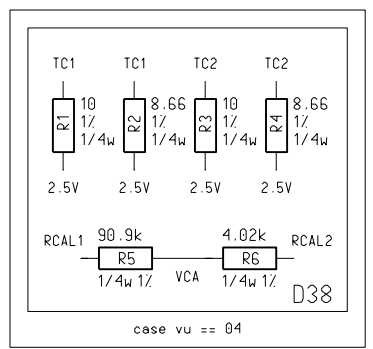
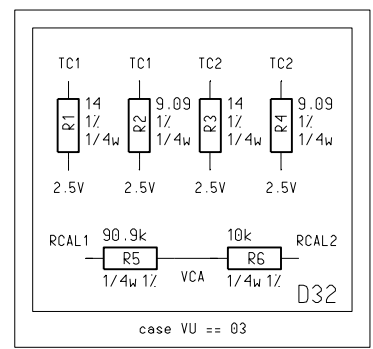
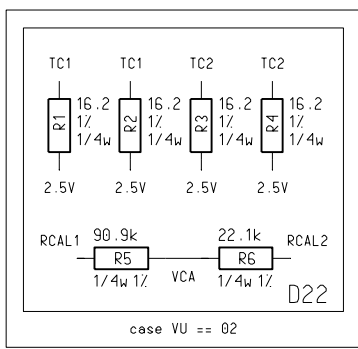
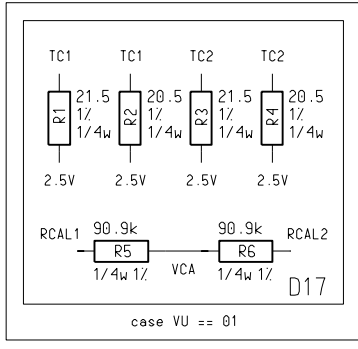
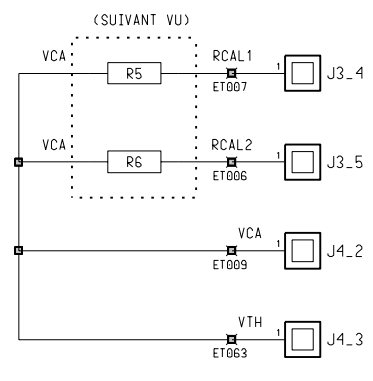
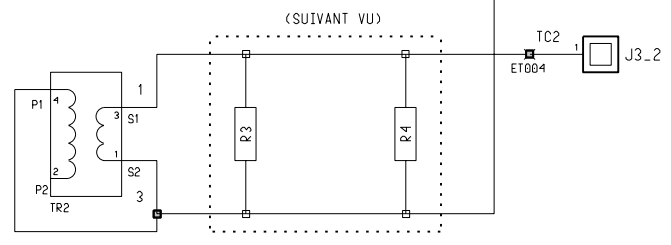
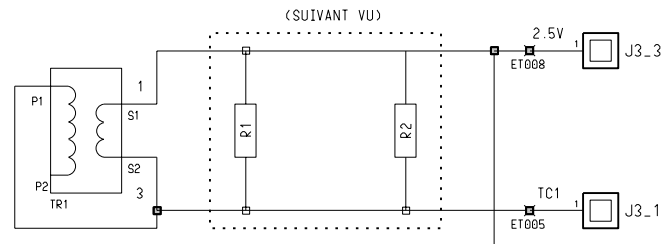
# IGNITERS PROTECTIONS



**MEASURE CARD**

Sizes 1, 2, 3

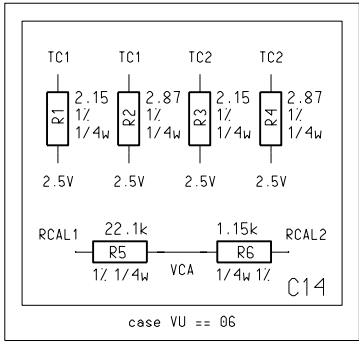
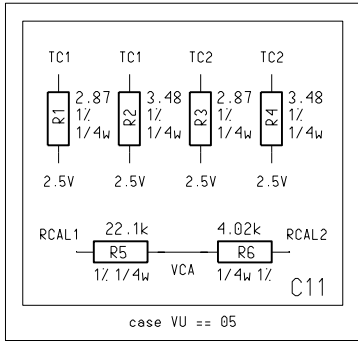
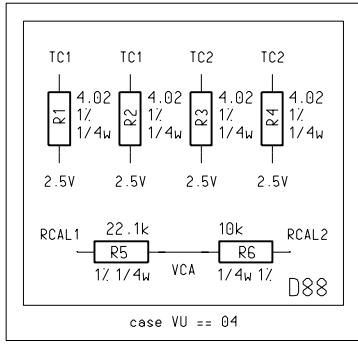
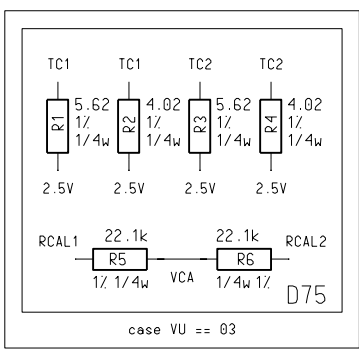
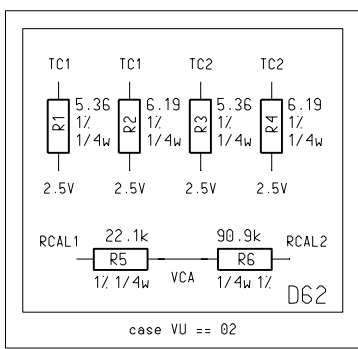
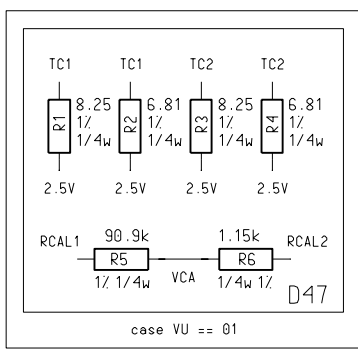
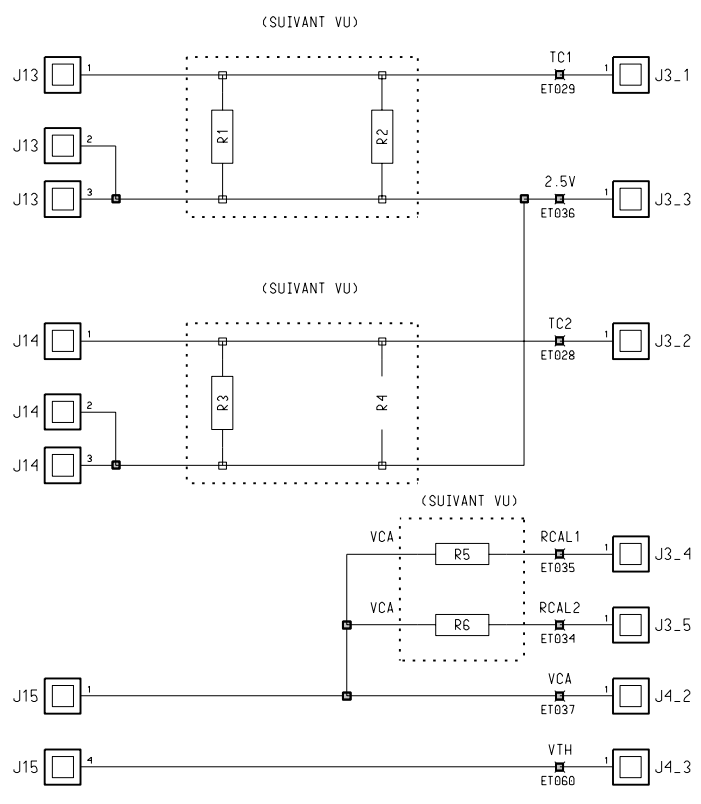




	Dates	Noms	Echelle	SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM			
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Verifie	06/10/1997	F.BOURDELET					
Approuve	06/10/1997	Ph.LOIZELET	Projet	6JC08			
Mentor design name : \$P6JC08/w80385752_03_02							
	Telemecanique			Dossier	86A3	RADICAL	VU
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						03	1/1

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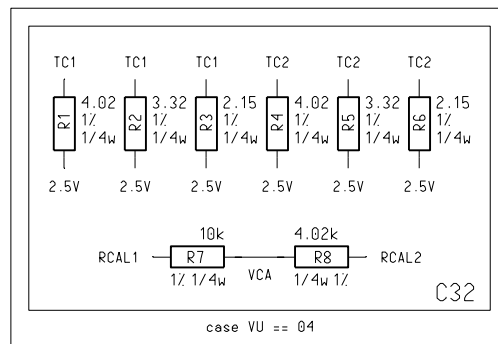
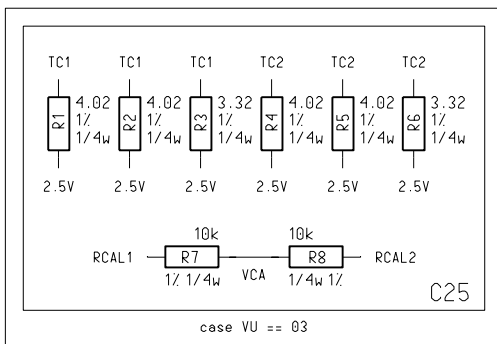
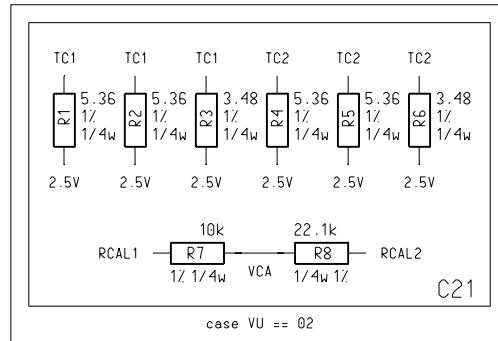
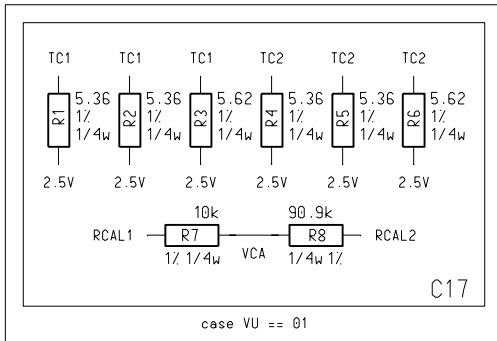
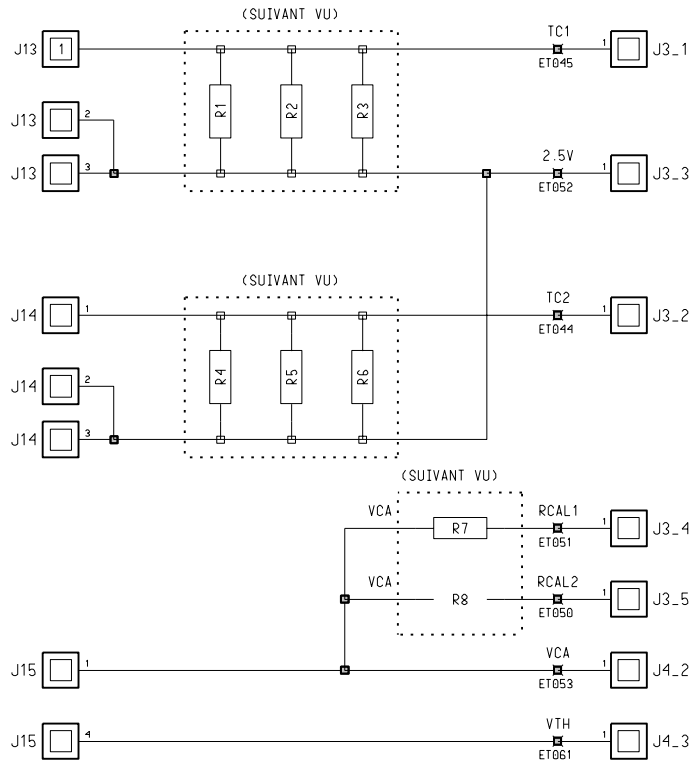
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	Dates	Noms	Echelle	SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM								
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Approuve	06/10/1997	Ph.LOIZELET	Dossier	86A4								
Mentor design name : \$P6JC08/w80385754_03_02				Format	A4	RADICAL		VU	VF	CD	IED	FOLIO
						038575400A30		03	1/1			

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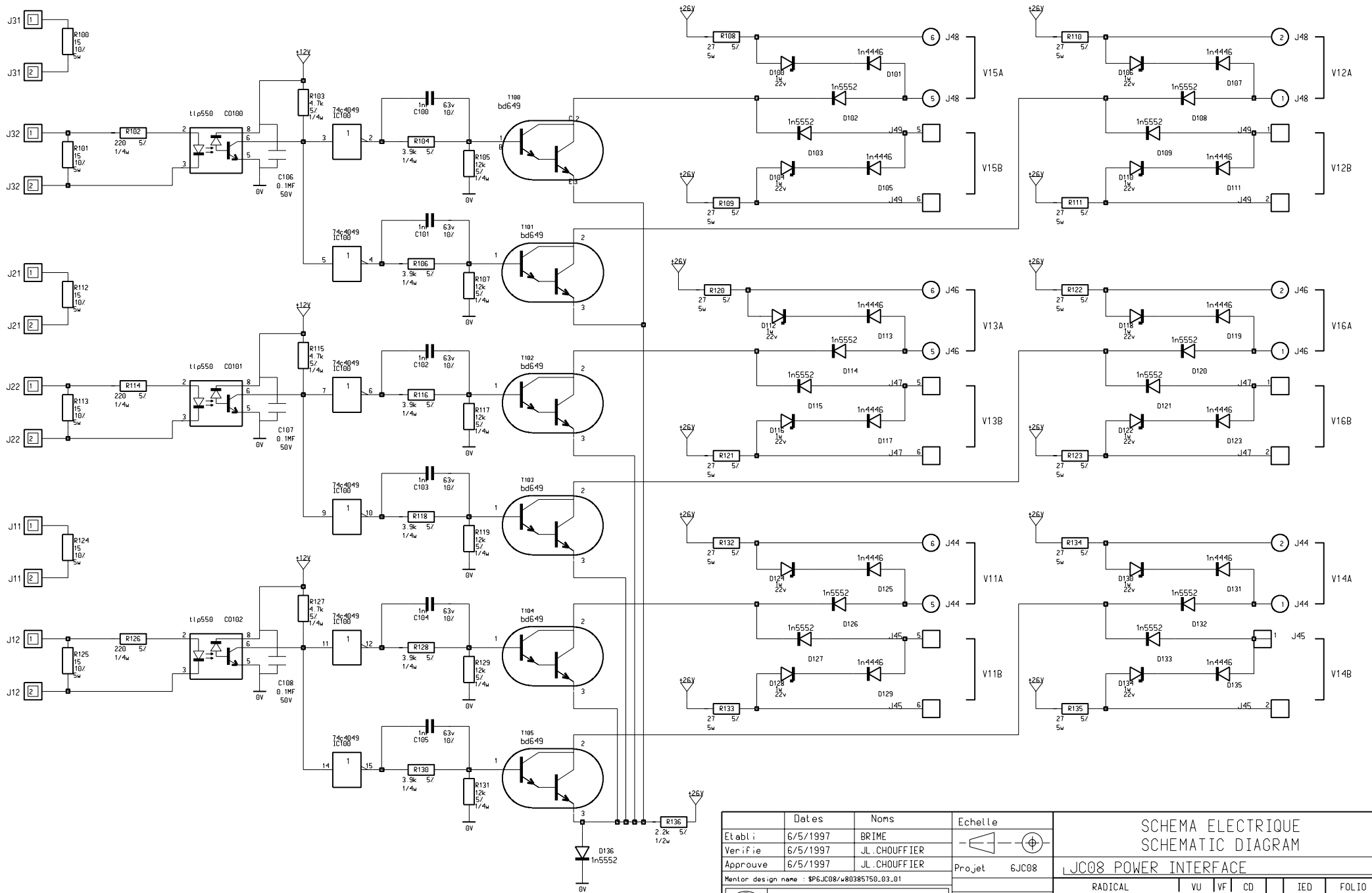
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	Dates	Noms	Echelle	SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM			
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Approuve	06/10/1997	Ph.LOIZELET					
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	Telemecanique			Dossier	86A5	IED	FOLIO
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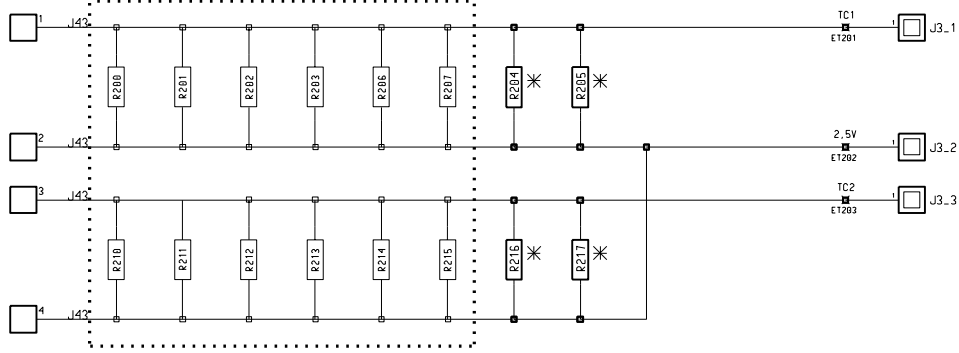
**INTERFACE CARD**

Sizes 4 & 5



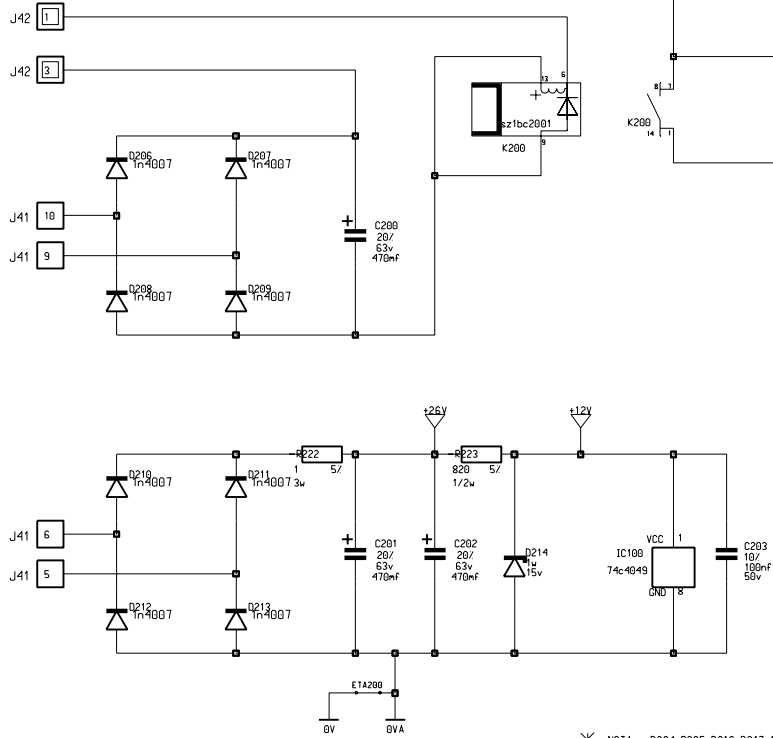
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Verifie : 6/5/1997		JL. CHOUFFIER		Projet : 6JC08		RADICAL   VU   VF   CD   IED   FOLIO			
Approuve : 6/5/1997		JL. CHOUFFIER		Dossier : 86A2		038575000A30   03   1/2			
Mentor design name : SP6JC08/w80385750_03_01		Format : A3		Telemecanique					

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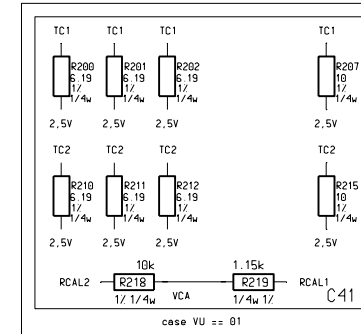


SUIVANT VU

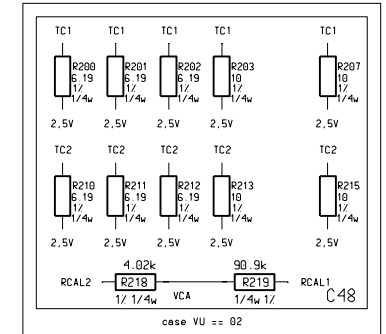
SUIVANT VU



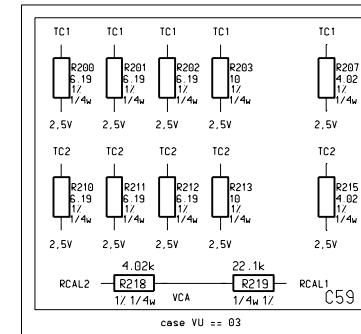
\* NOTA : R204, R205, R216, R217 NON CABLES



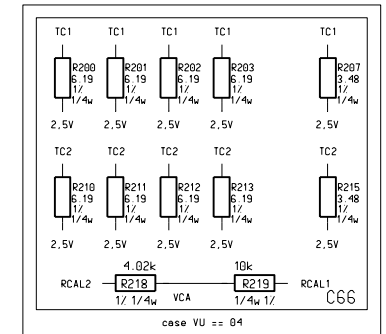
case VU == 01



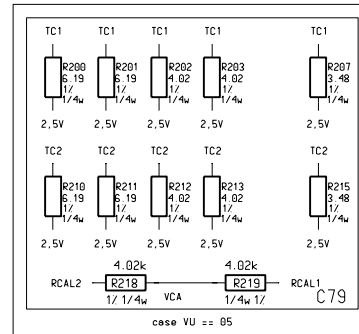
case VU == 02



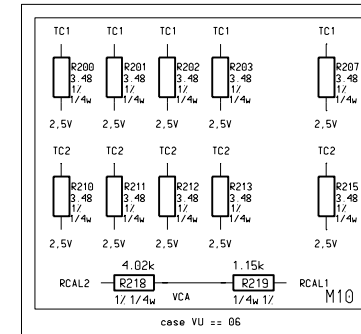
case VU == 03



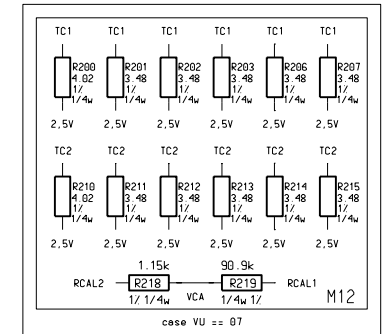
case VU == 04



case VU == 05



case VU == 06



case VU == 07

Dates	Noms	Echelle	SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM			
Etabli : 6/5/1997	BRIME		JC08 POWER INTERFACE			
Verifie : 6/5/1997	JL. CHOUFFIER		RADICAL	VU	VF	CD
Approuve : 6/5/1997	JL. CHOUFFIER	Projet	6JC08	IED	FOLIO	
Mentor design name : SP6JC08/w80385750_03_01		Dossier	86A2	038575000A30		
		Format	A3	03 2/2		

**FILTER CARD**

D

C

B

A

4

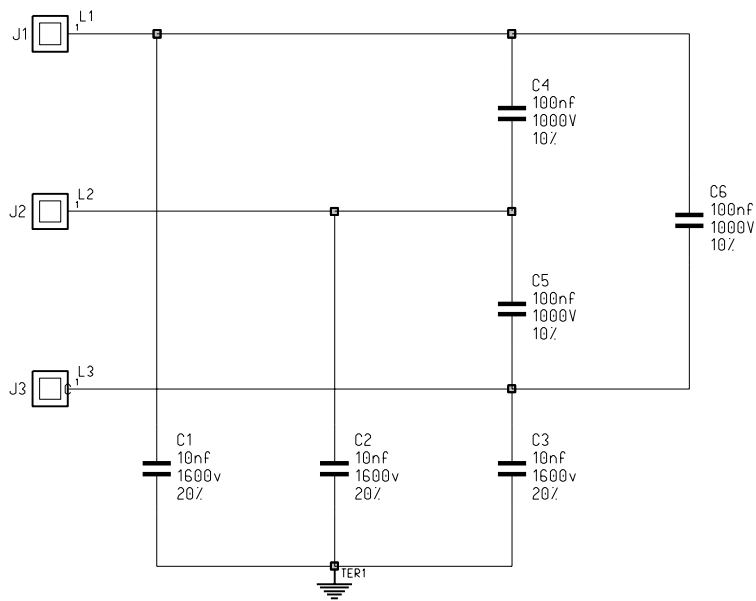
4

3

3

2

2



1

1

	Dates	Noms	Echelle	SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM						
Etabli	29/07/1996	ACAMAS								
Verifie	29/07/1996	L.MAGNINI	Projet	6JC08	JJC08 CARTE FILTRE T1					
Approuve	29/07/1996	JL.CHOUFFIER								
Mentor design name : \$P6JC08/w80385784_02_01			Dossier	86A	RADICAL	VU	VF	CD	IED	FOLIO
			Format	A4	0,385,78,40,1A,30			0,2	1/1	

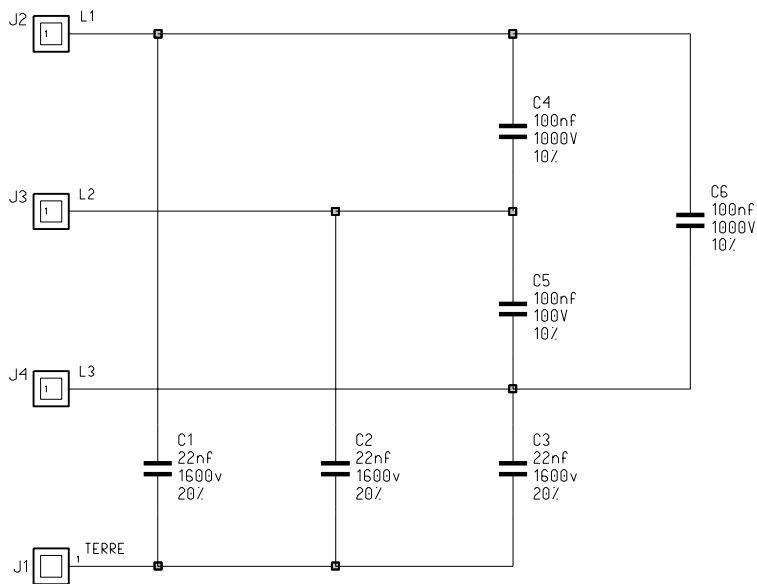
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C

B

A

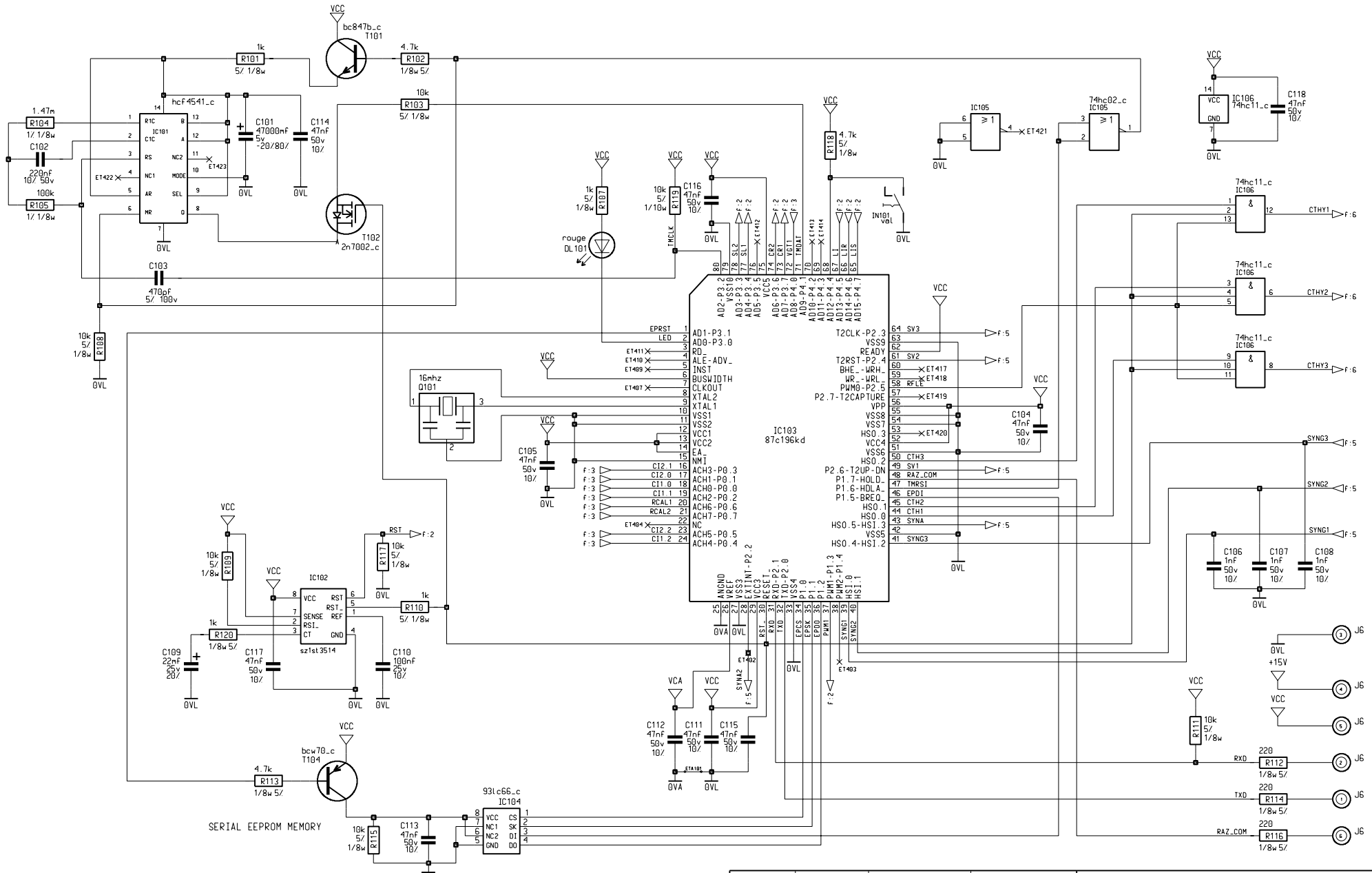




	Dates	Noms	Echelle	SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM						
Etabli	29/07/96	ACAMAS		JCO8 CARTE FILTRE T2						
Verifie	29/07/96	L.MAGNINI								
Approuve	29/07/96	JL.CHOUFFIER	Projet	6JC08	RADICAL	VU	VF	CD	IED	FOLIO
Mentor design name : \$P6JC08/w80385786_02_01			Dossier	86A8	038578601A30		02	1/1		
Telemecanique			Format	A4						

For the sizes 3 to 5, the filter card is  
only one condenser of 22 nF.

**CONTROL CARD**



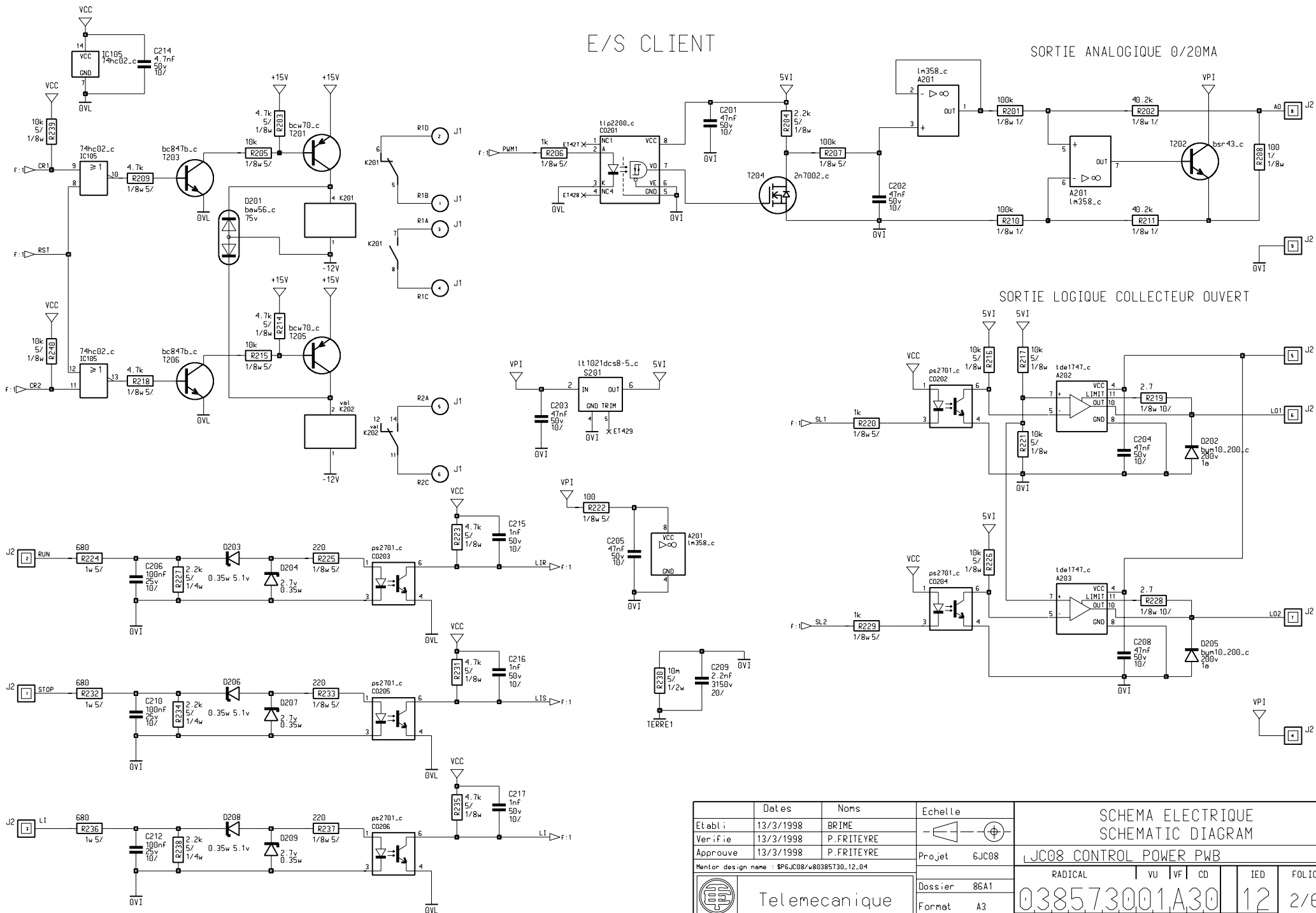
Dates		Noms		Echelle		SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM						
Elab: i	13/3/1998	BRIME		-		Jc08 CONTROL POWER PWB						
Verif: ie	13/3/1998	P.FRITTEYRE		-		RADICAL		VU	VF	CD	IED	FOLIO
Approuve	13/3/1998	P.FRITTEYRE		-		038573001A30		12		1/6		
Mention design name : SP6Jc08/w80385730.12_04												
				Dossier 86A1 Format A3								

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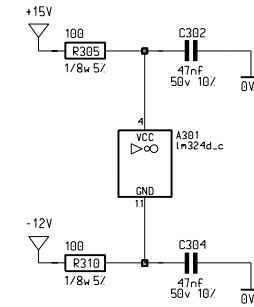
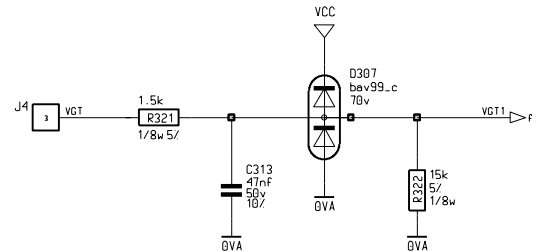
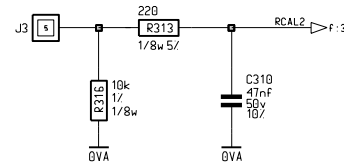
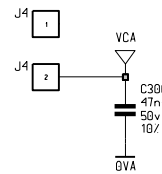
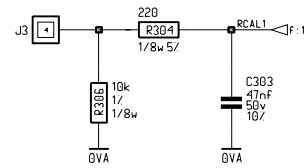
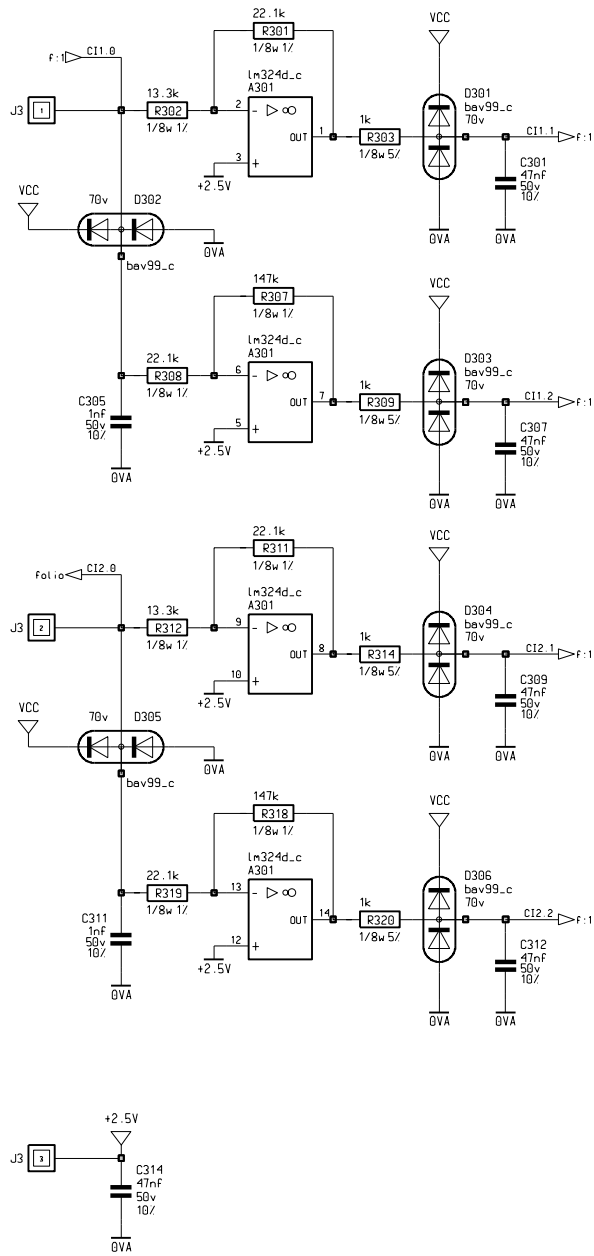
# E/S CLIENT

## SORTIE ANALOGIQUE 0/20MA

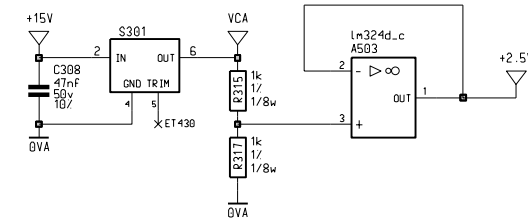
## SORTIE LOGIQUE COLLECTEUR OUVERT



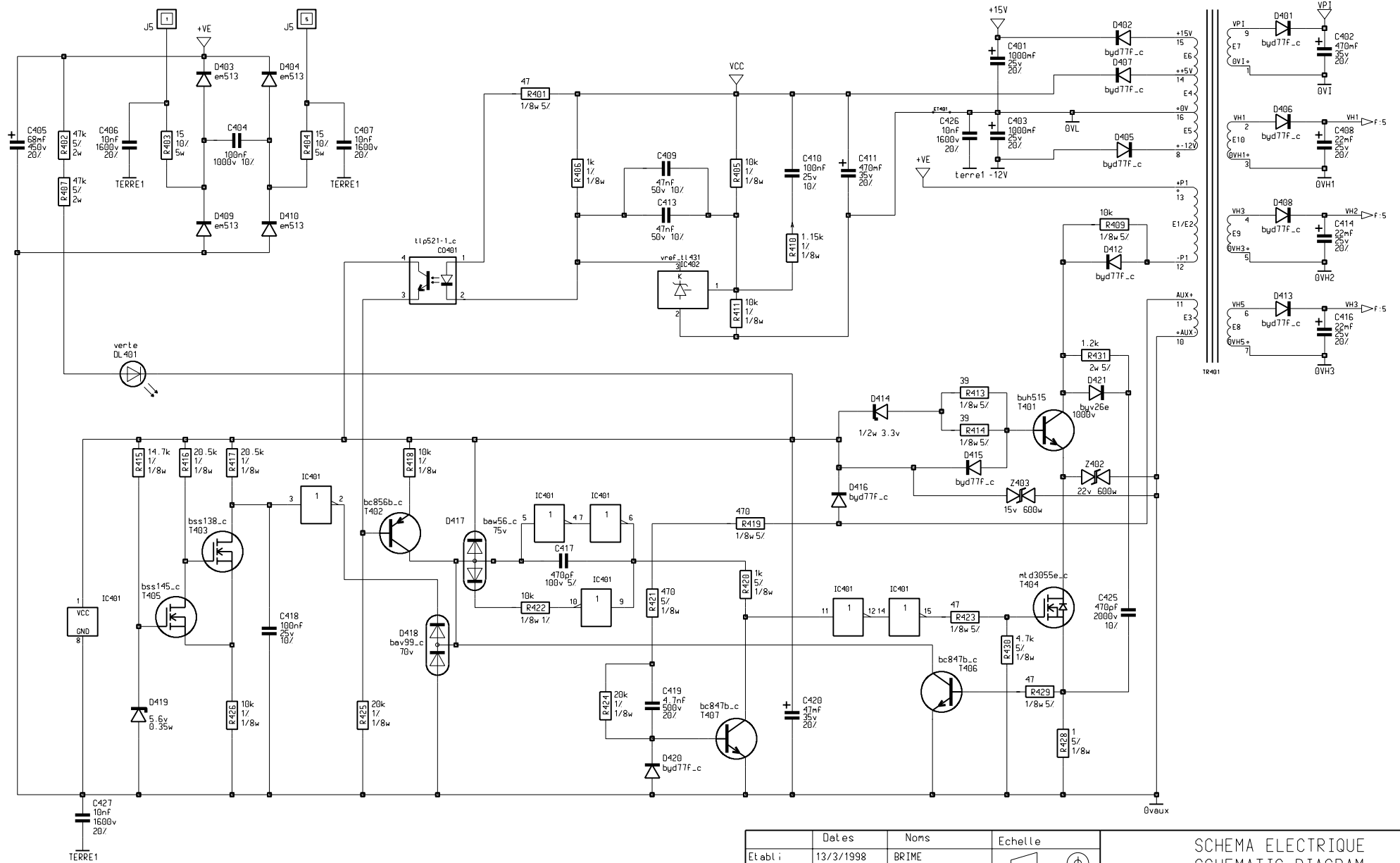
Dates		Noms		Echelle		SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM						
Etabli 13/3/1998		BRIME		-		JCO8 CONTROL POWER PWB						
Verifie 13/3/1998		P.FRITTEYRE		Projet 6JC08		RADICAL		VU	VF	CD	IED	FOLIO
Approuve 13/3/1998		P.FRITTEYRE		Dossier 86A1		038573001A30		12		2/6		
Mentor design name : SP6JC08/w80385730.12.04		Format A3										



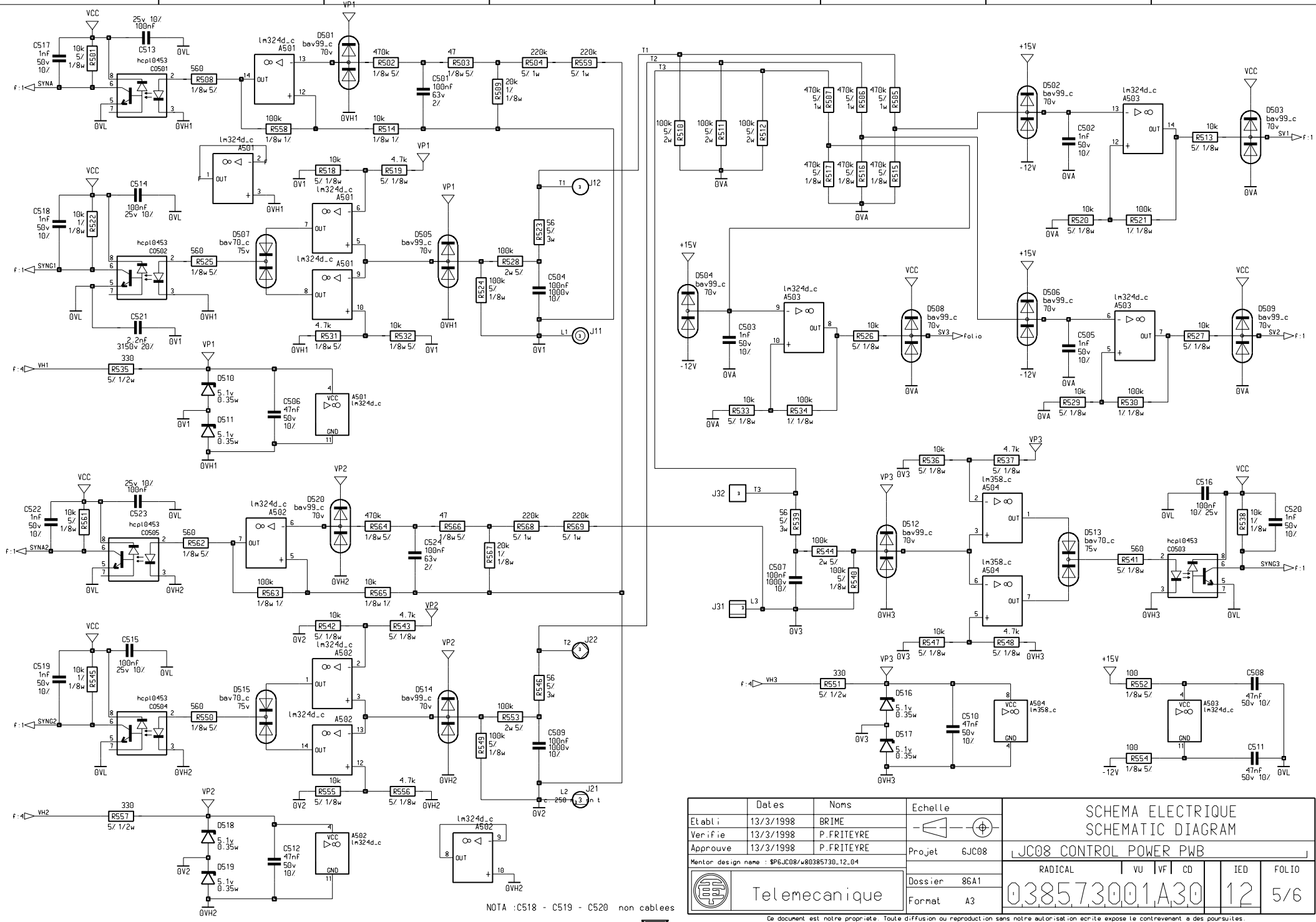
VOLTAGE REFERENCE



Dates		Noms		Echelle		SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM								
Etabli 13/3/1998		BRIME		-		JCO8 CONTROL POWER PWB								
Verifie 13/3/1998		P.FRITEYRE		-		Projet 6JC08		RADICAL		VU	VF	CD	IED	FOLIO
Approuve 13/3/1998		P.FRITEYRE		-		Dossier 86A1		038573001A30		12		3/6		
Mentor design name : SP6JC08/w80385730.12.04		-		-		Format A3								
		Telemecanique		-										



Dates		Noms		Echelle		SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM				
Etabli	13/3/1998	BRIME		-		JC08 CONTROL POWER PWB				
Verifie	13/3/1998	P.FRITEYRE		-		RADICAL   VU   VF   CD   IED   FOLIO				
Approuve	13/3/1998	P.FRITEYRE		-		038573001A30   12   4/6				
Mentor design name : SP6.JC08/w80385730.12.04							Dossier 86A1			
							Format A3			

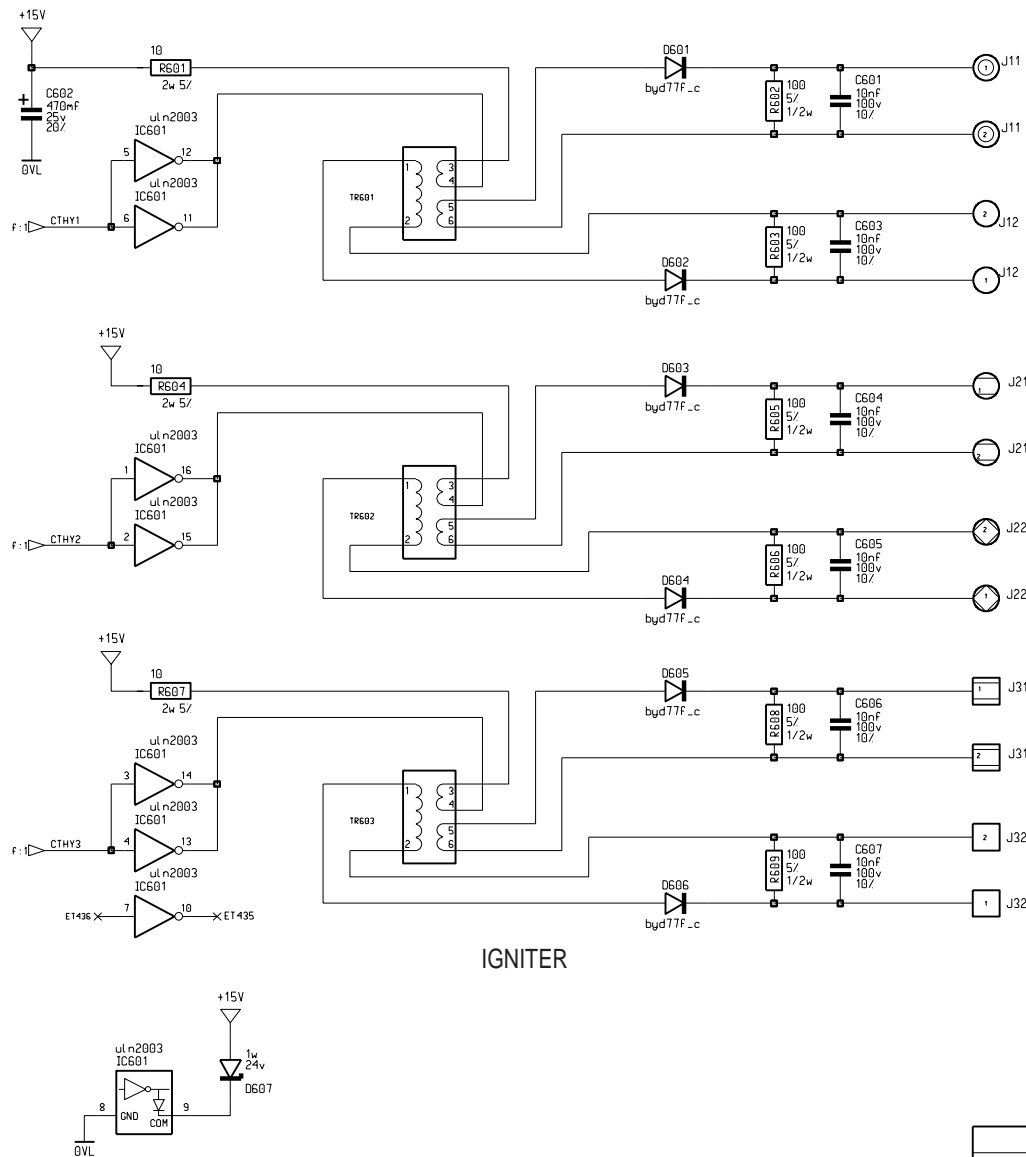


NOTA : C518 - C519 - C520 non cables

Dates		Noms		Echelle		SCHEMA ELECTRIQUE SCHEMATIC DIAGRAM					
Elab i	13/3/1998	BRIME		-		JCO8 CONTROL POWER PWB					
Verif i e	13/3/1998	P.FRIT EYRE		-		RADICAL					
Appro u v e	13/3/1998	P.FRIT EYRE		-		VU VF CD					
Mention design name : SP6JC08/w80385730.12_04							IED		FOLIO		
							038573001A30		12		5/6
							86A1				
Format A3											

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PHASE 1

PHASE 2

PHASE 3

IGNITER

J1			
CLIENT: RELAY OUTPUTS			FOL IO
1	R1B	RELAY 1: CONTACT NF	2
2	R1D	RELAY 1: CONTACT NF	2
3	R1A	RELAY 1: CONTACT NO	2
4	R1C	RELAY 1: CONTACT NO	2
5	R2A	RELAY 1: CONTACT NO	2
6	R2C	RELAY 1: CONTACT NO	2

J2			
CLIENT: LOGICAL INPUTS			FOL IO
LOGICAL ANALOG OUTPUTS			
1	STOP	LOGICAL INPUT 2: STOP	2
2	RUN	LOGICAL INPUT 1: RUN	2
3	LI	LOGICAL INPUT 3: ASSIGNED	2
4	PL	+24 V INSULATED	2
5	24V	POWER SUPPLY OF LOGICAL OUTLETS	2
6	LO1	LOGICAL OUTPUT 1	2
7	LO2	LOGICAL OUTPUT 2	2
8	AO	ANALOG OUTPUT	2
9	COM	0 V INSULATED	2

J3			
MEASURE CARD			FOL IO
1	TC1	CURRENT RETURN 1	3
2	TC2	CURRENT RETURN 2	3
3	2,5V	REFERENCE 2.5 V	3
4	RCAL 1	CALIBRE 1 RECOGNITION	3
5	RCAL 2	CALIBRE 2 RECOGNITION	3

J4			
MEASURE CARD			FOL IO
1	NC		3
2	VCA	REFERENCE 5 V	3
3	VTH	VIGITHERM RETURN	3

J5			
ELECTRIC SUPPLY			FOL IO
1	C	COMMON	4
2	NC		4
3	NC		4
4	NC		4
5	230	SUPPLY 230 V	4

J6			
CONSOLE TERMINAL BLOCK			FOL IO
1	TXD	TRANSMISSION	1
2	RXD	RECEPTION	1
3	0VL	0 V LOGICAL	1
4	15V	15 V SUPPLY	1
5	VCC	5 V SUPPLY	1
6	RAZ COM	RAZ COMMUNICATION	1

J11, J12, J21, J22, J31, J32			
THYRISTOR			FOL IO
1	G	TRIGGER	6
2	K1	CATHODE 1	6
3	K2	CATHODE 2	5

J17			
1	EARTH	CONSOLE EARTH	1

Et abli	Dates	Noms	Echelle		SCHEMA ELECTRIQUE							
Ver ifie	13/3/1998	BRIME			SCHEMATIC DIAGRAM							
Approuve	13/3/1998	P.FRITREYRE	Projet		6JC08	JC08 CONTROL POWER PWB						
Mentor design name : SP6JC08/w80385730_12_04												
				Dossier	86A1	RADICAL		VU	VF	CD	IED	FOLIO
				Format	A3	038573001A30		12		6/6		

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## MAINTENANCE MANUAL QUALITY SYSTEM

### **1°) Validation proceeding after repairing**

Following manipulations have to be performed on the test bench described in chapter 2-3:

1. Configure the product in status “test” (SSC) and test it on motor bench,
2. If the motor runs on RUN order and stops at the 3 stop configurations, without disable, the repair is over.
3. De-select “test” function and check return on closed loop (CLP=ON),
4. Reset configuration according to customer’s request and print it out by PC software (parameters list).

### **2°) Repair briefing**

Supports common to all VVD products have to be used.

This briefing has to be transmitted to the customer and to DAS and must contain the following information:

- Malfunction observed by the customer,
- Product information (complete reference, version, manufacturing date, ...),
- Malfunction observed by the technician at product reception,
- State of product historical and diagnosis,
- Tests and checks performed and results,
- Possible breakdown causes
- Faulty and replaced components,
- Returned product configuration.

### **3°) Quality reporting to DAS**

After sending the repair briefing to DAS, RETCLI or COUNT (according to the countries) have to be informed for the DAS to manage the product quality at best.