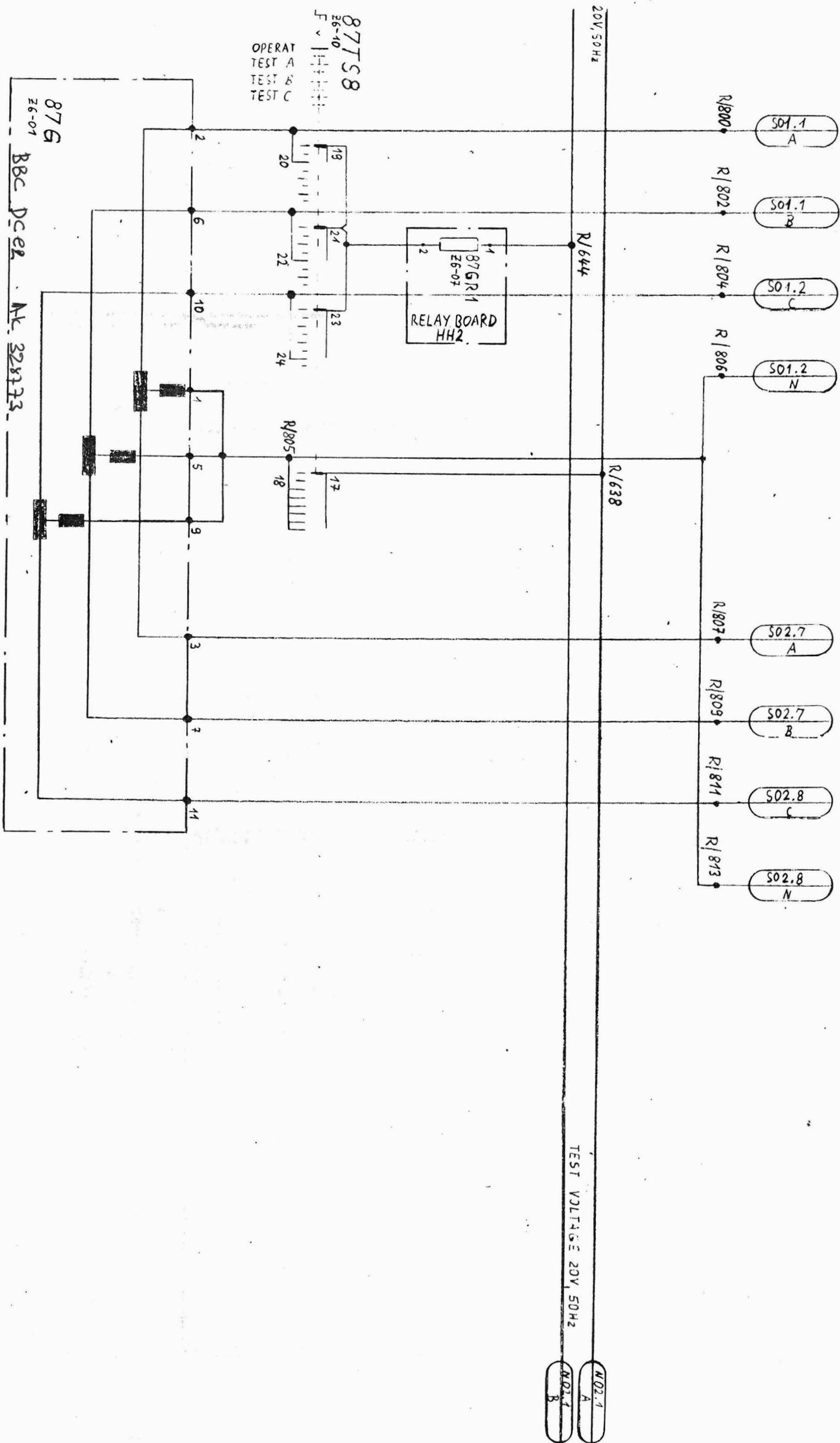


RELAY BOARD HH1



HN 5/10 RANUTP142

BBC DEER AK 32873

AND / REV A/34.5.75k		BBC		DAT / DATE 19.2.78		UNIT 1		GEN. DIFF. PROTECTION 87G		ZEHNUNGS-NR / DRAWING NO 35X 813 0007		=		BLATT NR AND	
1 0142 (T/b) + sch/DRI 1		BROWN BOVEN		GEZ / DRAWN		4		MEASURING + TEST CIRCUITS		35X 813 0007		+		SHEET NO1	
		ABT / DEPT		GEPR / CHECKED											
		5X/5524													

FROM T3, CORE 1
AND T9



OPERAT.
TEST A
TEST B
TEST C

87TS9
36-10

87 ST
26-01

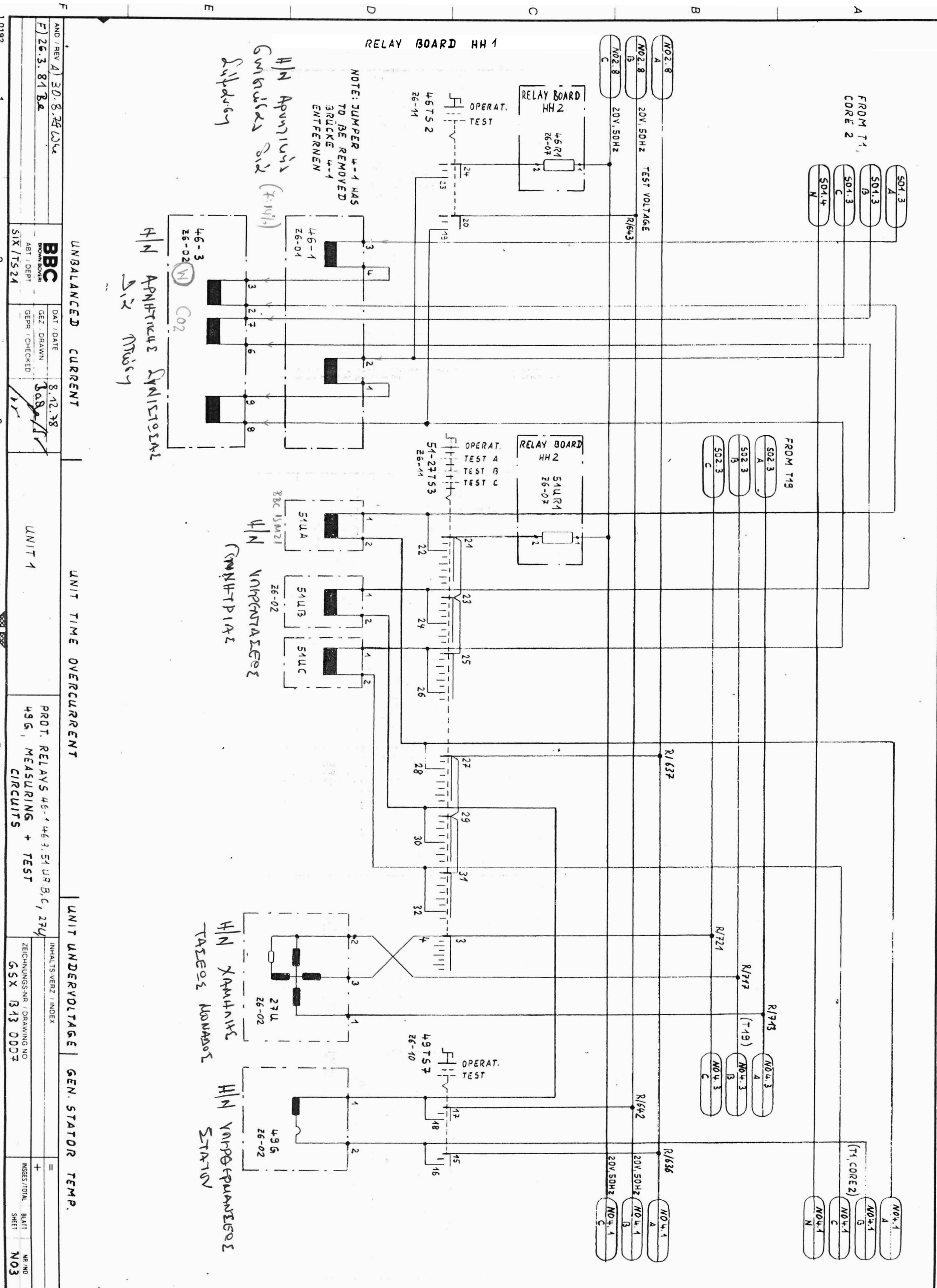
BBC D21863

$$\frac{H}{2} \cdot \frac{\Delta \phi}{\phi} \quad \text{Gamma} - \text{K} \sum \text{Sxvot} \text{Mund} \Delta \phi$$

TEST VOLTAGE 20V, 50HZ

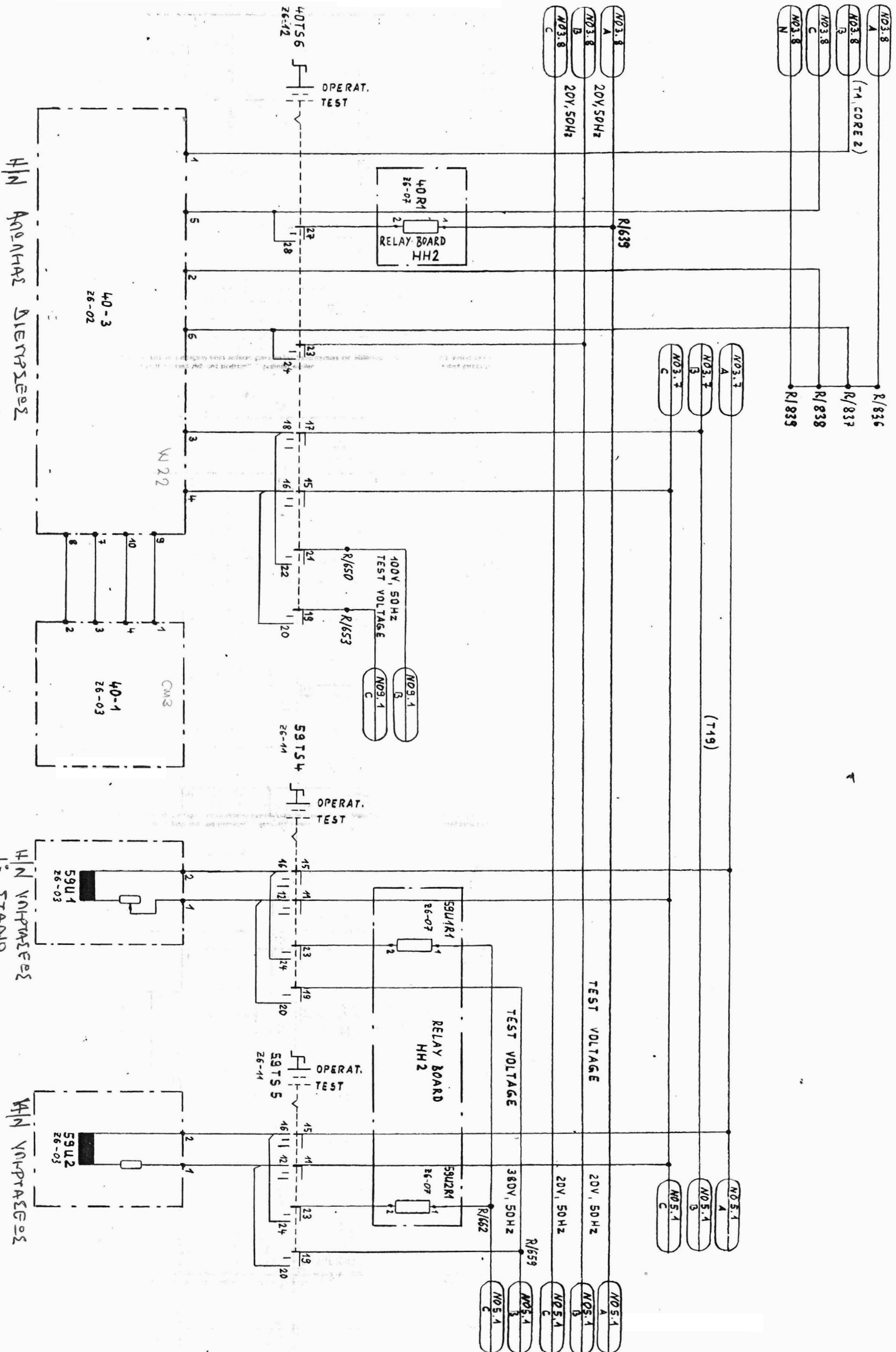
20V, 50Hz

INHALTS-VERZ. / INDEX	=		
	+	BLATT SHEET	NR. / NO N02
ZEICHNUNGS-NR. / DRAWING NO GSK B13 0007		MESSG. / TOTAL	



AND / REV A) 30.8.78 WJc		BBC BROWN BOVERI		DAT / DATE 8.12.78		GEZ. / DRAWN J. B. /		UNIT 1		PROT. RELAYS 46-1 46-3, 51UR1, 27U, 49G, MEASURING + TEST CIRCUITS		ZEICHNUNGS-NR. / DRAWING NO. GSX 1313 0007		INSGES. / TOTAL BLATT / SHEET NR. / NO. 03	
F) 26.3.81 Bc		ABT. / DEPT. SIX / TS24		GEPR. / CHECKED											

RELAY BOARD HH1



40-3
26-02

40-1
26-03

59U1
26-03

59U2
26-03

LOSS OF EXCITATION

OVERVOLTAGE, STAGE 1

OVERVOLTAGE, STAGE 2

UNIT 1

PRDT. RELAYS 40-3, 40-1, 59U1, 59U2 MEASURING + TEST CIRCUITS

ZEICHNUNGS-NR. / DRAWING NO. 65X B43 0007

MSGES/TOTAL

BLATT SHEET NO. 4

AND / REV A / 31.5.76

BBC

GEZ / DATE 12.12.78

GEZ / DRAWN

GEPR / CHECKED

ABT / DEPT

SIX / 7521

1 0192

1

2

3

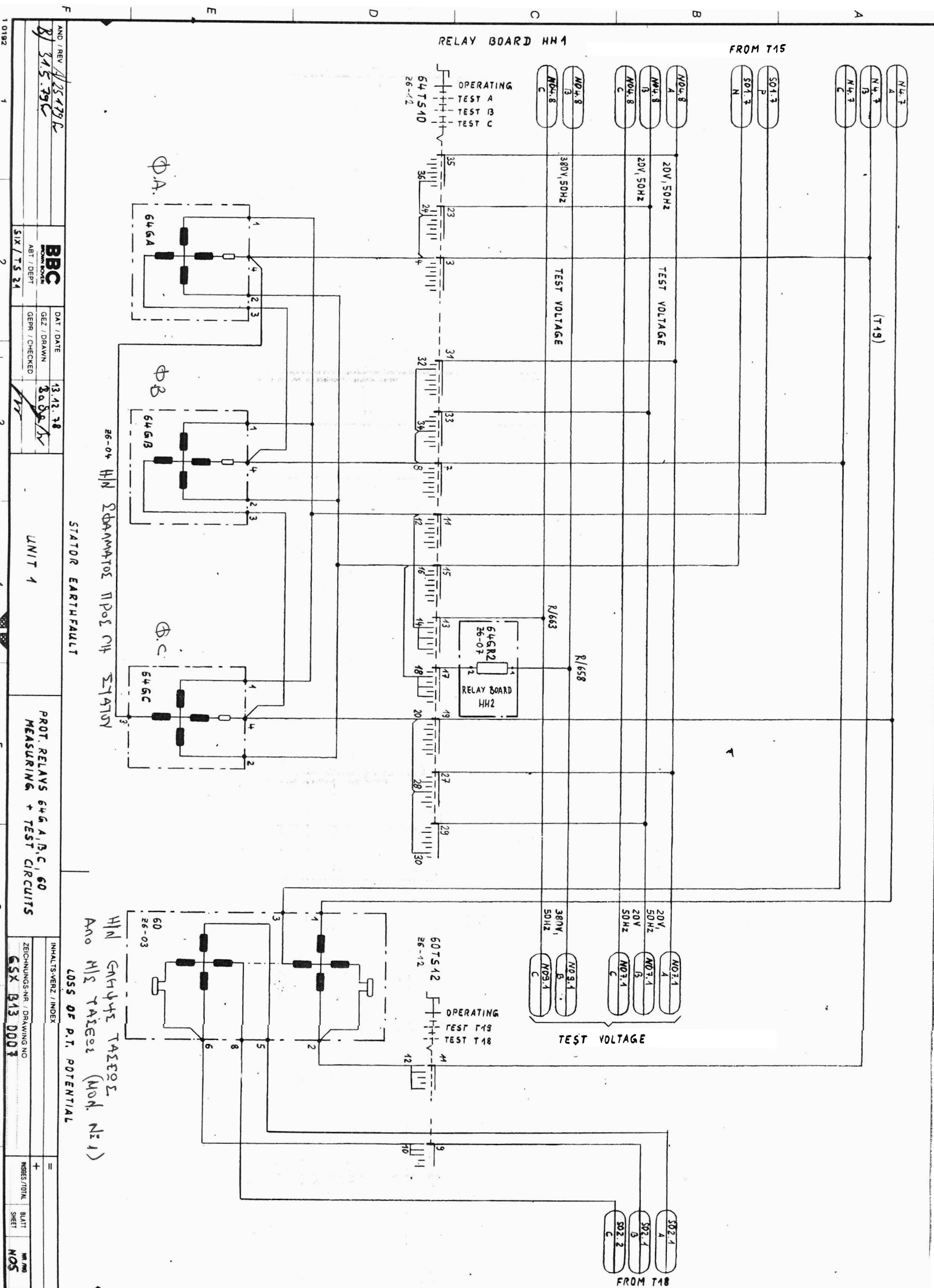
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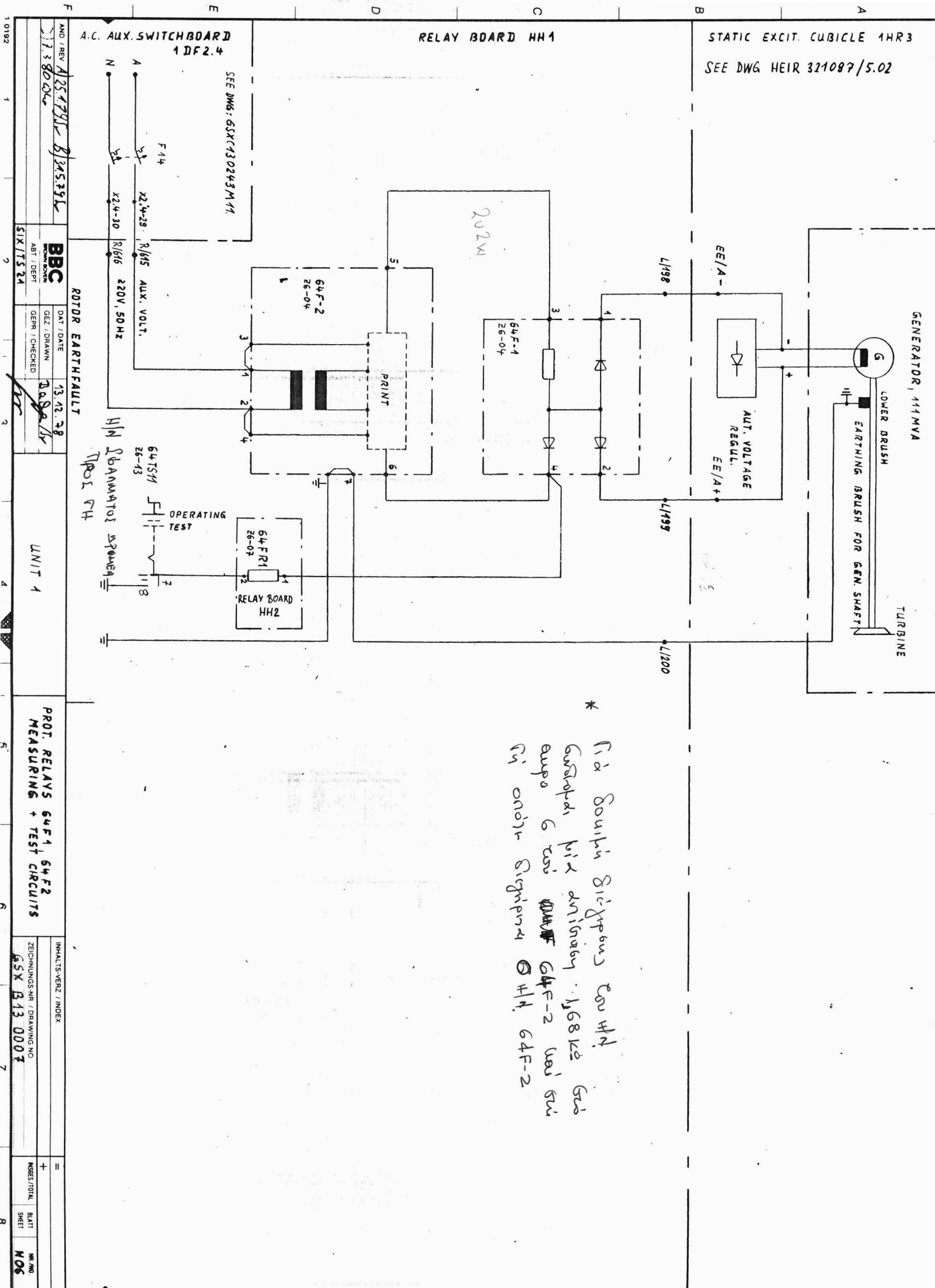
6

7

8



AND / REV 1/25.1.79		BBC		DAT / DATE 13.12.78		UNIT 1		PROT. RELAYS 64 GA, B, C, 60		MEASURING + TEST CIRCUITS	
31.5.79		BROWN BOVEN		GEZ / DRAWN 30.08.78		GEPR / CHECKED		INHALTS-VERZ. / INDEX		ZEICHNUNGS-NR. / DRAWING NO. 65X B13 0003	
SIX / TS 24		ABT / DEPT		GEPR / CHECKED				MSSES / TOTAL		BLATT SHEET	
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*
 Die Schaltung des HH1
 besteht aus einem 64F-1 und
 einem 64F-2, die in
 der Schaltung des HH1, 64F-2



LINE TIME OVERCURRENT PROTECTION

PROT, RELAYS 54NMT, 54LA, B, C
MEASURING + TEST CIRCUITS

AND / REV	A) 24.5.79 h		
BBC	KNOWN BOWEN	DATE / DATE	14.12.78
ABT / DEPT	GEPR / CHECKED	GEZ / DRAWN	30.02.79 h
516/TS 24	rr		
UNIT 1		PROT. RELAYS 54 NMT, 54 LA, B, C MEASURING + TEST CIRCUITS	
ZEICHNUNGS-NR. / DRAWING NO.		INHALTS-VERZ. / INDEX	
G 5 X B 13. 0007		=	
MSGES. / TOTAL		+	
BLATT SHEET		VOR UND	
		NOT	

OUT OF STEP BLOCKING

LINE EARLYCALLT TIME OVERCURRENT

DISTANCE PROTECTION

AND REV A/30.5.79

DATE / DATE	14.12.78
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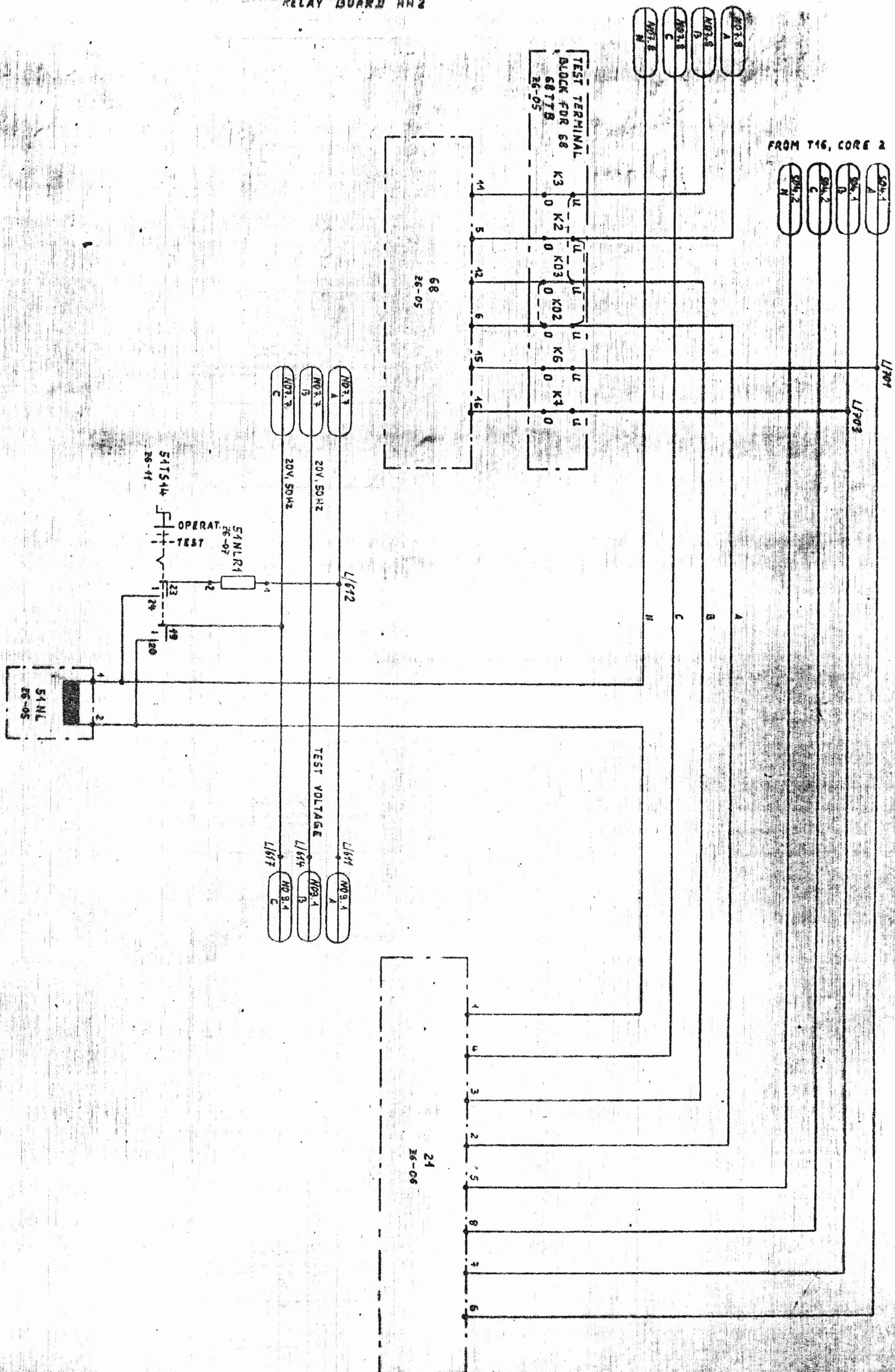
UNIT A

LIBRARY PRODT. REEL 58, 54 NL, 24

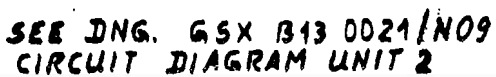
INHALTS-VERZ. / INDEX

69

1000



RELAY BOARD HH3



Note : * TRANSFORMER 380/20V WILL BE MOUNTED IN RELAY BOARD HH7
 Δ TRANSFORMER 380/100V WILL BE MOUNTED IN RELAY BOARD HH6

AMD / REV		A) 24.5.78		1		2		3		4		5		6		7		8	
BBC		DAT / DATE		14.12.78		3		4		5		6		7		8		9	
GEZ / DRAWN		30.8.78		3		4		5		6		7		8		9		10	
ABT / DEPT		GEPR / CHECKED		30		3		4		5		6		7		8		9	
SIX / TS 24		30		3		4		5		6		7		8		9		10	
UNIT 1										AUX. TEST VOLTAGES FOR PROT.									
ZEICHNUNGS-NR. / DRAWING NO.										G5X 343 0007									
INHALTS-VERZ. / INDEX										=									
+										+									
BLATT										BLATT									
SHEET										SHEET									
NR. / NO.										NR. / NO.									
10192										10192									

The diagram illustrates the internal wiring of Relay Board HH1, which controls two relays, 876 and 877. Each relay unit includes a coil (876S8, 877S9), a set of contacts (1-10, 11-15, 16-20, 21-24), and an alarm contact (876X1, 877X1). The relays are connected to a common bus (L/1402) and a test switch (V1, V2, V3, V4, V5). The test switch is controlled by a control board (GB2) which also provides test lamps (876L37, 877L38, 876L39, 877L39). The control board is connected to a generator protection and test circuit (GPR37, GPR38, GPR39, GPR40, GPR41, GPR42, GPR43, GPR44, GPR45, GPR46, GPR47, GPR48, GPR49, GPR50, GPR51, GPR52, GPR53, GPR54, GPR55, GPR56, GPR57, GPR58, GPR59, GPR60, GPR61, GPR62, GPR63, GPR64, GPR65, GPR66, GPR67, GPR68, GPR69, GPR70, GPR71, GPR72, GPR73, GPR74, GPR75, GPR76, GPR77, GPR78, GPR79, GPR80, GPR81, GPR82, GPR83, GPR84, GPR85, GPR86, GPR87, GPR88, GPR89, GPR90, GPR91, GPR92, GPR93, GPR94, GPR95, GPR96, GPR97, GPR98, GPR99, GPR100).

INHALTS-VERZ. / INDEX		=	
		+	
ZEICHNUNGS-NR. / DRAWING NO.		BLATT / TOTAL	WERT / VAL.
508P43 0004		SHEET	N40

TEST: LOCKOUT REL. 866

TEST: GEN. DIFF. RELAY 876

TEST SWITCH: "TEST"

TEST: GEN. - TRANSF. - DIFF. REL. 876A

CAMP 1631 484 D.C.
 M-24
 M-24
 (P40+)

NOV 1951

NOV 1951

NOV 1951

N ₁₂₋₃	48V.D.C.	L6-08	L6-08	L6-08	KM-1
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[illegible]

86T/37

26-07

87T/18

26-07

QO

IL
NITE
EST

97T/10

26-07

TEST LAMPS

ΔV_1

ΔV_1

ΔV_1

40, THE POS

ΔV_1

1
2
3
4

"TEST
S I
ITION
GB2
26-07

CONFIDENTIAL

26-13
V3
L/244

867-37

LOCKOUT RELAY 866

TEST LAMP; TEST SW. "TEST"

TLT

U

4/120

N41.2
TLT

1/11/11

1

0

TRIP: LOCKOUT RELAY 86A

1

①

R03
87

$$\frac{.2}{6}$$

RE
ALA
5 80-92
A

LA
ARM
V4
26-13
876X1
LAR
V5
26-13

Y

M

5

0

Bo

0
T
T
T

L/189

0
T
T
T

L/182

PERA
EST
EST
EST

PERA
EST
EST
EST

17.
 A
 B
 C

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87TS8 26-10 2

5

9

M

1

87TS9 26-10 2

2

1

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WHITE HUNGARIAN

17	19	21	23	15	17	19	21	15
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0/0	0/01
26-01	26-01

07C

07C

20	22	20	22	24
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1

220V D.C.

701 D.C.

N 42.5	N 44.1
P 49 +	P 49 +

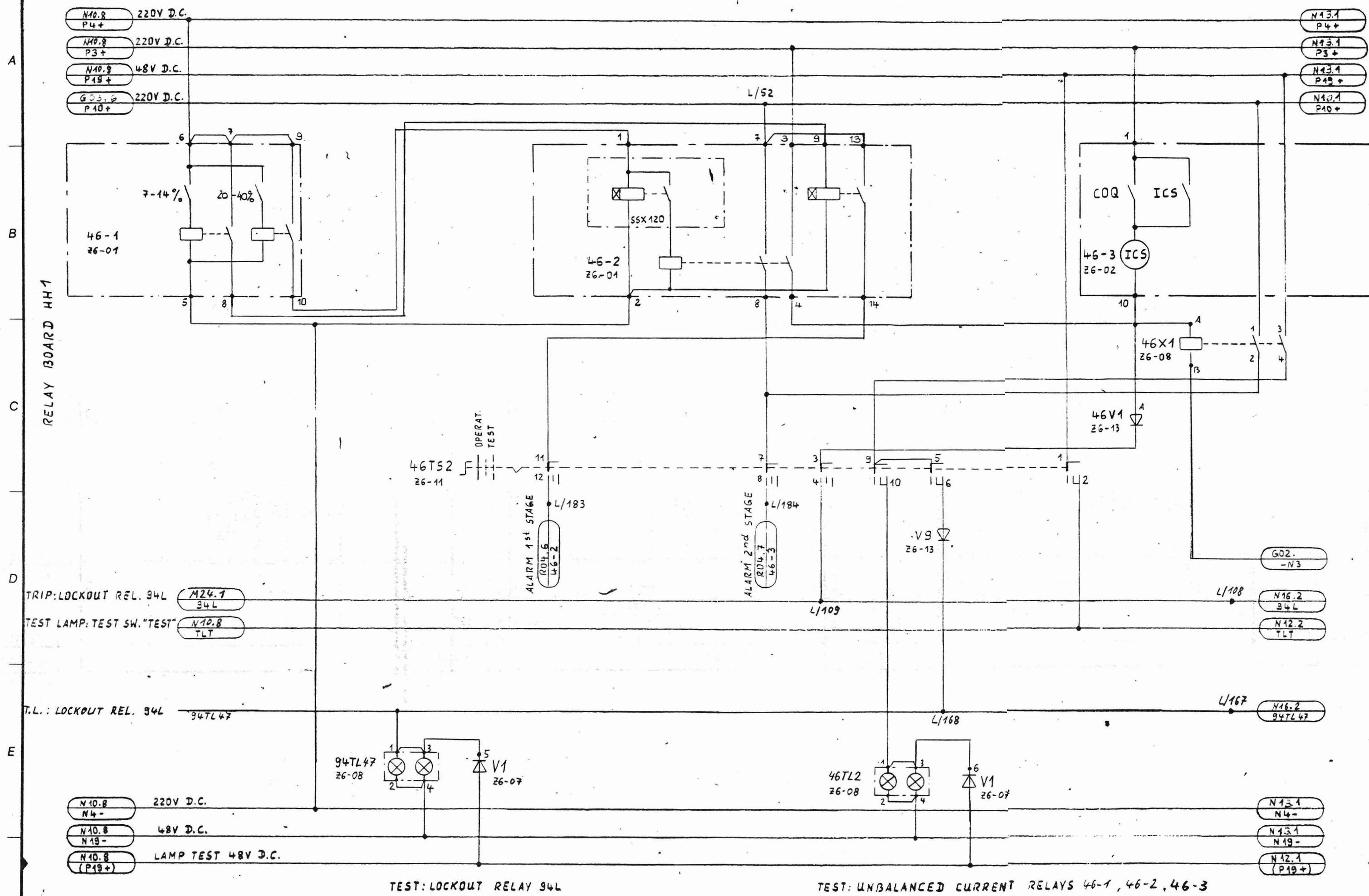
[illegible]

N4.8	220V d.c.				N4.1
------	-----------	--	--	--	------

$\frac{N_{12.8}}{D_{L+}}$) 225V D.C.
 —————
 $\frac{N_{11.1}}{D_{L+}}$

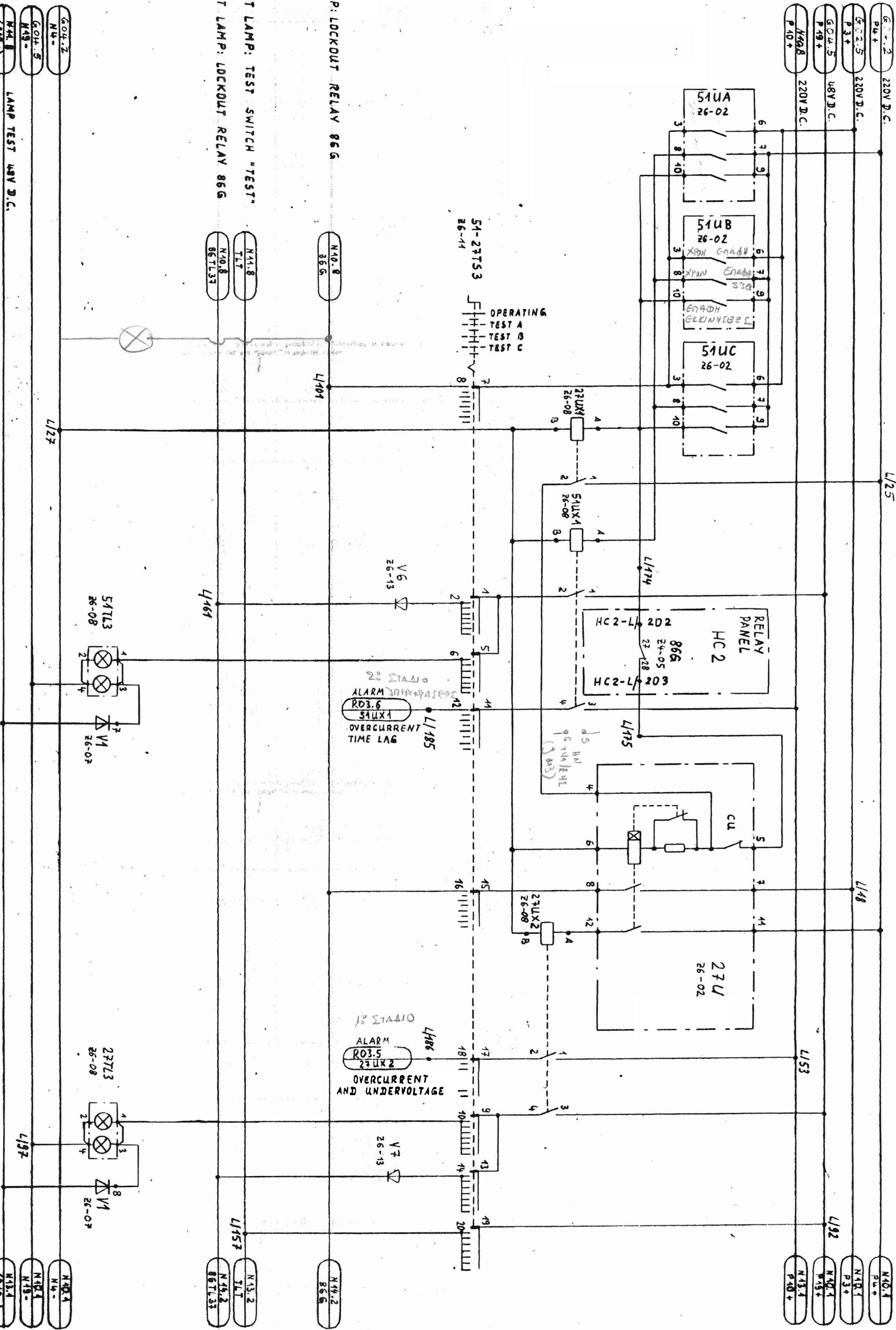
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AND / REV A) 30.8.79 W.L.		DAT / DATE 15.12.78		PRDT. RELAYS 46-1, 46-2, 46-3		INHALTS-VERZ / INDEX		=	
F) 26.3.81 W.L.		GEZ / DRAWN Bode/Sr		TRIP, ALARM AND TEST CIRCUITS		ZEICHNUNGS-NR. / DRAWING NO		+	
G) 8.81 CHU.		GEPR / CHECKED		UNIT 1.		INGES/TOTAL		BLATT	
SIX ITS 24						SHEET		NR./NO.	
						GSX B13 0007		N 11	

RELAY BOARD NH4



TEST LAMP: TEST SWITCH "TEST"
TEST LAMP: LOCKOUT RELAY 866

TRIP: LOCKOUT RELAY 866

604.2
N4-
604.5
N4-
N4.8
LAMP TEST 48V D.C.

N4.8
T.L.T.
N4.8
86TL37

N4.8
365

OPERATING
TEST A
TEST B
TEST C

RELAY
PANEL
HC 2
866
24-05
HC2-LF 202
HC2-LF 203

2° STAD10
ALARM 2014-04-05
RD3.6
51UX1
OVERCURRENT
TIME LAG

1° STAD10
ALARM
RD3.5
27UX2
OVERCURRENT
AND UNDERVOLTAGE

51TL3
26-08
V1
26-07

27TL3
26-08
V1
26-07

TEST: OVERCURRENT TIME LAG RELAYS

TEST: OVERCURRENT
AND UNDERVOLTAGE RELAY

UNIT 1

PROT. RELAYS 51UA, B, C, 27UL
TRIP, ALARM AND TEST CIRCUITS

BBC
GEZ / DRAWN
ABT / DEPT
GERP / CHECKED
13.12.78
3.02.79

INHALTS-VERZ. / INDEX
ZEICHNUNGS-NR. / DRAWING NO
CSX 843.0007

MSSES / TOTAL
BLATT
SHEET
N42

F

E

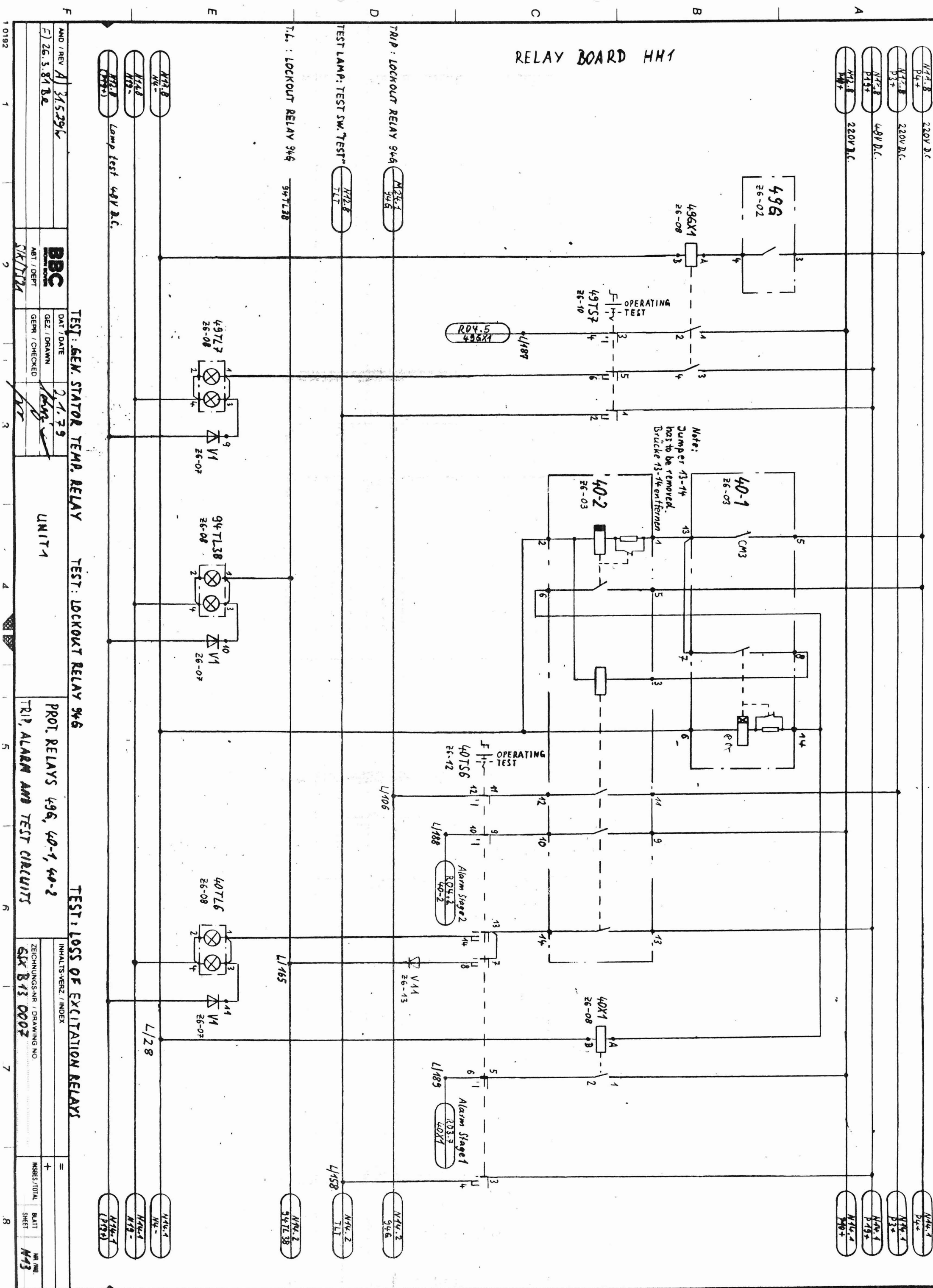
D

C

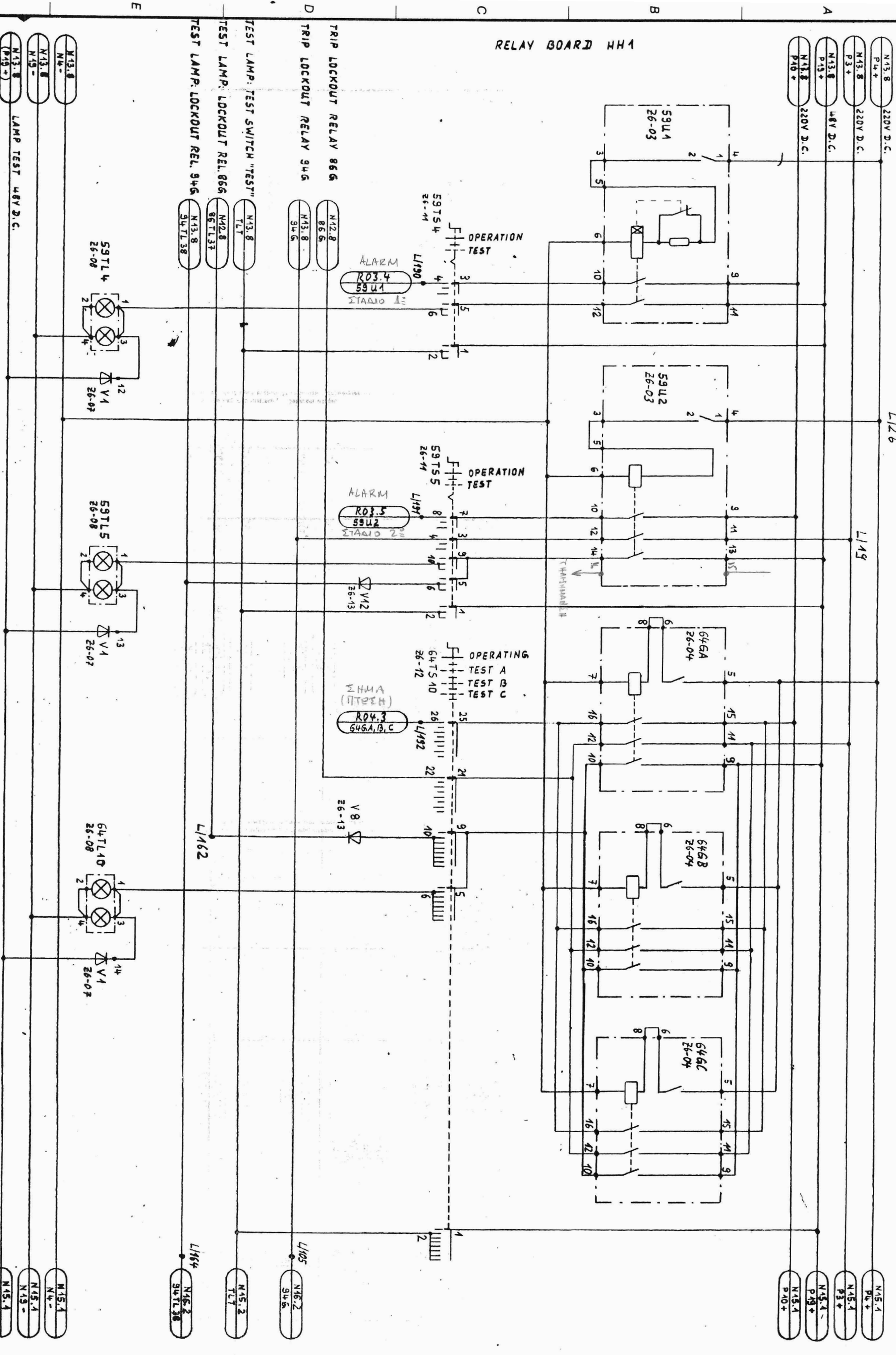
B

A

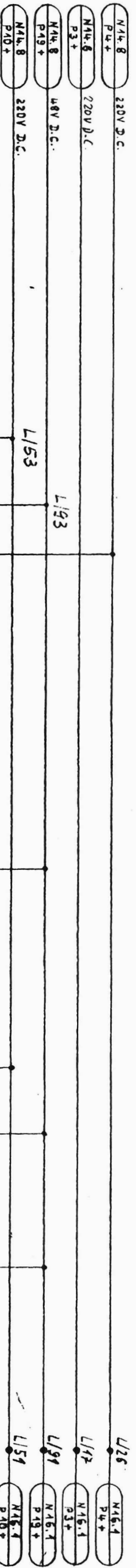
1 0182 1 2 3 4 5 6 7 8



RELAY BOARD HH1



AND / REV		A) 34.5.73 h		TEST: OVERVOLTAGE RELAY STAGE 1		TEST: OVERVOLTAGE RELAY STAGE 2		TEST: STATOR EARTH FAULT RELAYS	
F) 26.3.81		BBC		DAT / DATE		2.1.79		UNIT 1	
		BROWN ROYEN		GEZ / DRAWN		30.0.81		PROT. RELAYS S9U1, S9U2, S9U4, S9U5, S9U6, S9U7, S9U8, S9U9, S9U10, S9U11, S9U12, S9U13, S9U14, S9U15, S9U16, S9U17, S9U18, S9U19, S9U20, S9U21, S9U22, S9U23, S9U24, S9U25, S9U26, S9U27, S9U28, S9U29, S9U30, S9U31, S9U32, S9U33, S9U34, S9U35, S9U36, S9U37, S9U38, S9U39, S9U40, S9U41, S9U42, S9U43, S9U44, S9U45, S9U46, S9U47, S9U48, S9U49, S9U50, S9U51, S9U52, S9U53, S9U54, S9U55, S9U56, S9U57, S9U58, S9U59, S9U60, S9U61, S9U62, S9U63, S9U64, S9U65, S9U66, S9U67, S9U68, S9U69, S9U70, S9U71, S9U72, S9U73, S9U74, S9U75, S9U76, S9U77, S9U78, S9U79, S9U80, S9U81, S9U82, S9U83, S9U84, S9U85, S9U86, S9U87, S9U88, S9U89, S9U90, S9U91, S9U92, S9U93, S9U94, S9U95, S9U96, S9U97, S9U98, S9U99, S9U100	
		ABT / DEPT		GEPR / CHECKED					
		SIX / TS 24							
								</	

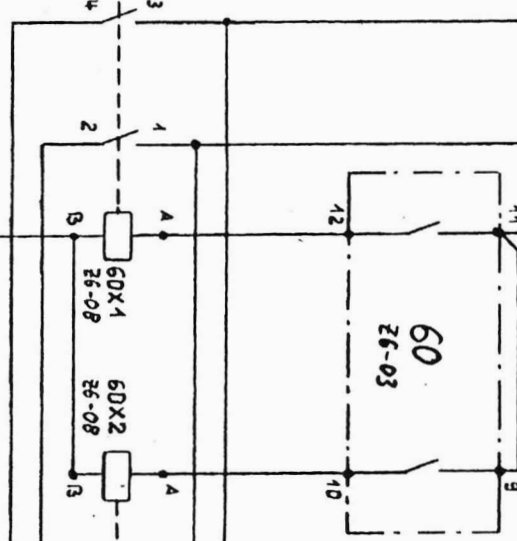
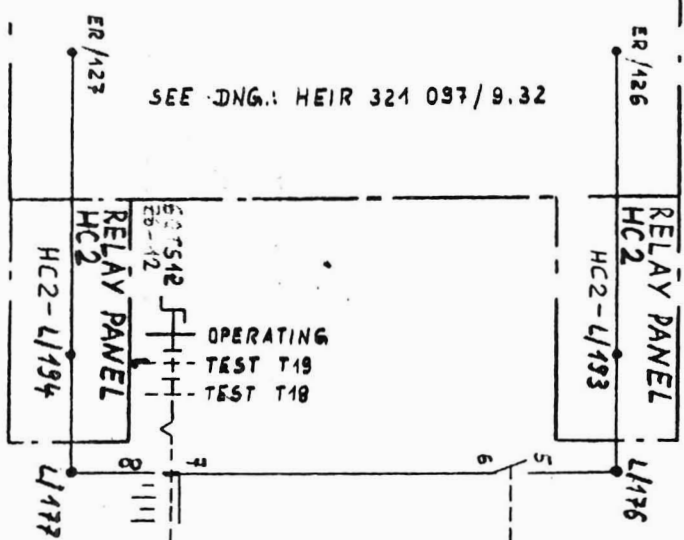


RELAY BOARD HH1

AUT. VOLTAGE REGUL. 4HR1

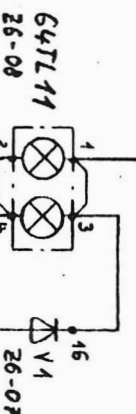
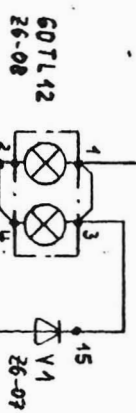
LOSS OF P.T. POTENTIAL

SEE DNG.: HEIR 321 097/9.32



ALARM R05.2 60X1,60X2

ALARM R04.4 64F-2

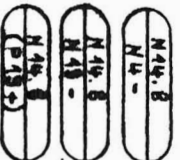


TEST LAMP: TEST SWITCH "TEST"

N14.8 TLT

L/456

N16.2 TLT

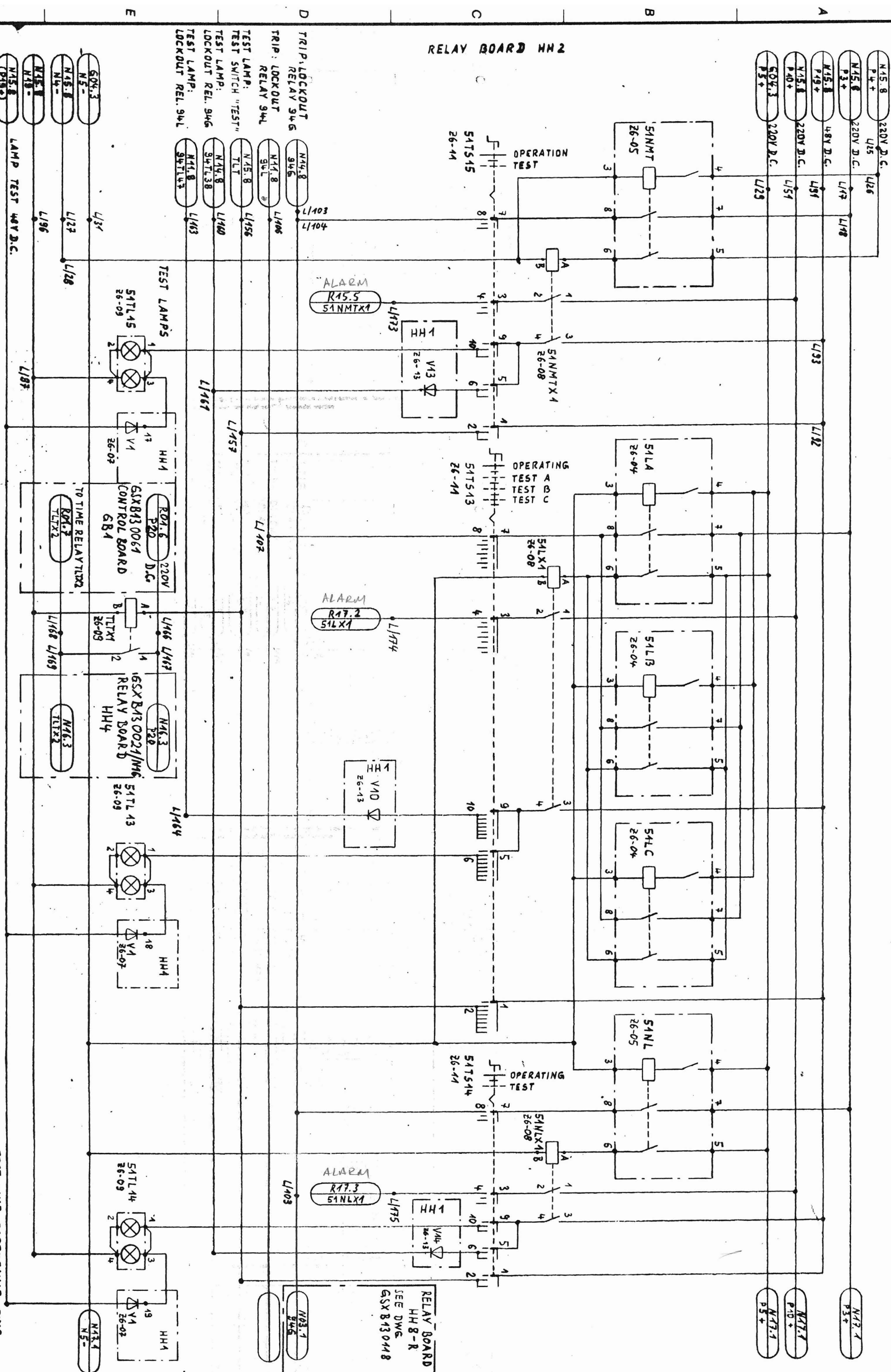


LAMP TEST 48V D.C.

TEST: LOSS OF P.T. POTENTIAL RELAY

TEST: ROTOR EARTHFAULT RELAY

AND / REV	A 31.5.79	BBC	DAT / DATE	3.1.79	GEZ / DRAWN	2089/1	ABT / DEPT.	SIX/TS24	GEPR / CHECKED	UNIT 1	PROT. RELAYS 60, 64F-2 TRIP, ALARM AND TEST CIRCUITS	ZEICHNUNGS-NR. / DRAWING NO	65X B43 0007	INHALTS-VERZ. / INDEX	MSSES / TOTAL	BLATT	SHEET	NR. / ANG.	N45
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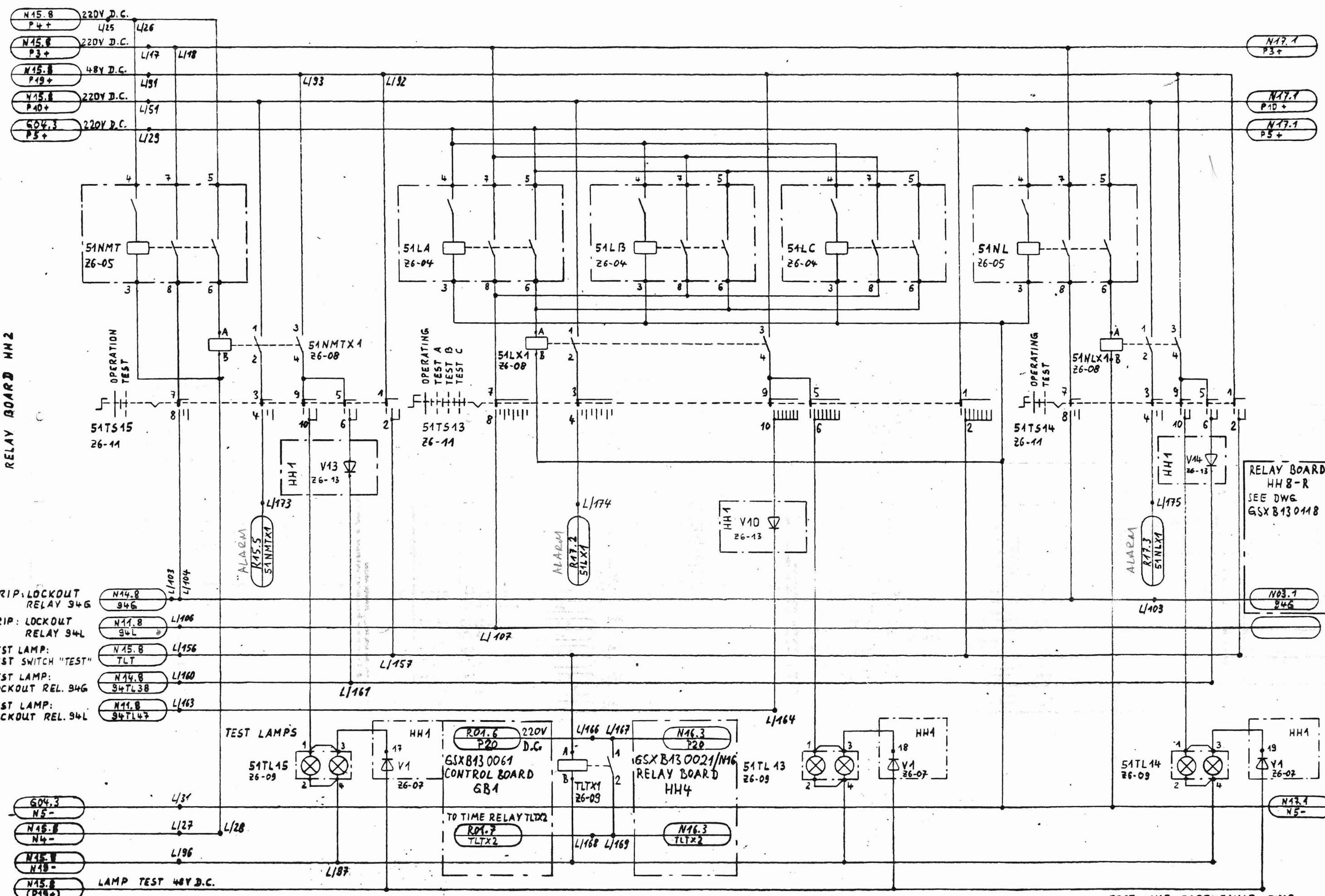


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A
B
C
D
E
F



TEST: MAIN TR. NEUTR. TIME OVERCURREL. RELAY

TEST: LINE TIME OVERCURREL. RELAYS

TEST: LINE EARTHFAULT TIME OVERCURREL. RELAY

AND / REV	A) 22.2.79L, 3) 31.5.79L	DAT / DATE	3.1.79	PROT. RELAYS: 51NMT, 51LA, B, C, 51NL	INHALTS-VERZ. / INDEX	=
	26.3.81 WLe	GEZ. / DRAWN	Boege	TRIP, ALARM AND TEST CIRCUITS		+
ABT. / DEPT	SIX / TS 21	GEPR. / CHECKED			ZEICHNUNGS-NR. / DRAWING NO	INSSES / TOTAL
					GSX B43 0007	BLATT
						SHEET
						NR. / NO.
						N 16

