ROHDE&SCHWARZ

Measuring Instruments
and Systems Division

Manual

TEST ADAPTER FOR CURRENT AND VOLTAGE MEASUREMENTS CMT-Z6

844.3002.02

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Table of Contents

1 Specifications

DC Voltage Measurements

Voltage measurement range	0 to ± 30 V
Resolution	10 mV up to 1 V test voltage
	100 mV up to 30 V test voltage
Error (V > 100 mV)	5 % of measured value + resolution

DC Current Measurements

Current measurement range	0 to ± 10 A
Resolution	10 mA up to 1 A test current
	100 mA up to 10 A test current
Error (I > 100 mA)	5 % of measured value + resolution

2 Operation

2.1 Putting into Operation

The test adapter option CMT-Z6 for current and voltage measurements requires for the CMT basis instrument a software state of ≥ 5.0.

The long connecting cable of the test adapter CMT-Z6 is plugged into MEMORY socket 86 of the CMT. The measurements which are then no longer performed by the CMT but by the CMT-Z6 option, for instance offer the advantage that short current-carrying cables may be used. Currents are measured at the blue sockets via a shunt of 50 mΩ. Voltage measurements are carried out at the red/black sockets. For simultaneously measuring current and voltage, the blue and red/black sockets may be conneced.

Exception:

If the modulation generators 1 or 2 are switched on during TX and RX test, a switchover from RX to TX or vice versa will due to this setting not terminate the voltage and current mesurement procedure.

Overdriving the measured quantities ($|V| > 30$ V, $|I| > 10$ A) causes an overflow message of the CMT. In the case of current measurements, the measured value is first preceded by a triangle symbol. With currents of over 15.0 A, also an overflow message appears. No messages are output in the case of in-phase overdriving. In-phase drive plus voltage drive $|V| > 35$ V and current >15 A may cause damage.

2.2 Manual Operation

Voltage and current measurements are initiated and terminated using the special functions to be entered via the key panel 39 in combination with SPEC key 55.

240	SPEC	Voltage measurement
241	SPEC	Current measurement
242	SPEC	Voltage and current measurement
243	SPEC	Termination of measurement

The values measured are output on the alphanumeric display 2. The results of current measuring, voltage measuring or combined measuring procedures are continuously output on the display in a measuring cycle of about 0.5 seconds. If a setting or measurement is activated, for which this display is also used, the voltage/ current measurement is switched off.

2.3 Automatic Operation

Since the test adapter option CMT-Z6 for current and voltage measurements is controlled via special functions only, remote control of CMT-Z6 via IEC bus can be derived from IEC bus commands for special functions:

SPECIALFUNCTION: DATA 240
SPECIALF: DA 240

e.g. for PUC/SCUD as controller

```
10 IECOUT 0, "SPECIALF:DA 240?"
20 IECIN 0, A$
30 PRINT A$
```

Output value: 12.5 V
No tolerance evaluation of these measurement results will be effected by the autorun control.

Automatic Switch-Off

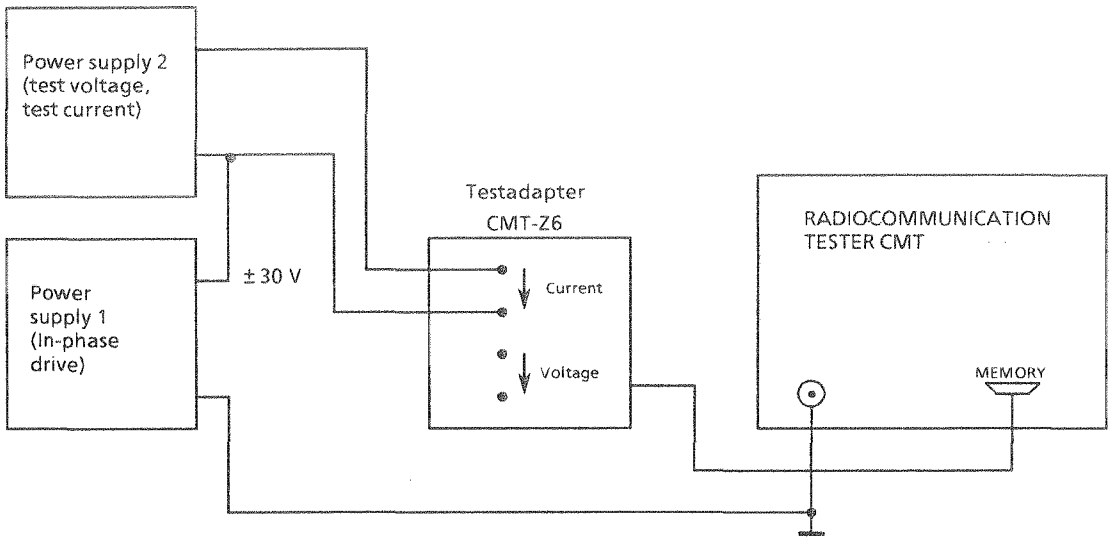
If the test adapter option CMT-Z6 measures values identical within a tolerance window of ±5% over a period of about 20 minutes, the measurement routine will then be deactivated so as not to put too much strain on the relays. Any five test values outside of the respective tolerance window will restart the timer.

3 Performance Test

3.1 Required Measuring Equipment and Accessories

2 Power supplies NGAS 32/10 (Order No. 192.0803.04)

Test setup:



3.2 Testing the Rated Specifications

The two tables listed below which also serve as performance test report specify the test points as functions of the parameters for in-phase drive. The maximum deviations are indicated as well.

3.2.1 Testing Voltage Measurements

Test voltage	In-phase drive								
	+ 29 V			0 V			-29 V		
	min		max	min		max	min		max
+ 30 V	-	-	-	28.4 V		31.6 V	-	-	-
+ 1 V	940 mV		1.15 V	940 mV		1.15 V	-	-	-
+ 100 mV	85 mV		115 mV	85 mV		115 mV	-	-	-
0 V	-10 mV *)		10 mV *)	-10 mV *)		10 mV *)	-10 mV *)		10 mV *)
- 100 mV	-	-	-	-115 mV		-85 mV	-115 mV		-85 mV
- 1V	-	-	-	-1.15 V		-940 mV	-1.15 V		-940 mV
- 30 V	-	-	-	-31.6 V		-28.4 V	-	-	-

*) Internal tolerance

3.2.2 Testing Current Measurements

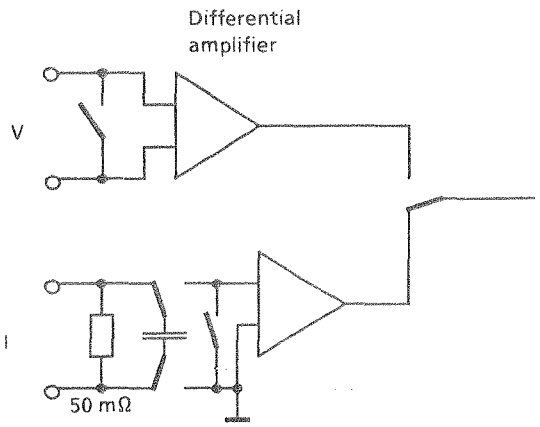
Test current	In-phase drive								
	+ 30 V			0 V			-30 V		
	min		max	min		max	min		max
+ 10 A	-	-	-	9.4 A		10.6 A	-	-	-
+ 1 A	-	-	-	0.94 A		1.15 A	-	-	-
+ 0.1 A	85 mA		115 mA	85 mA		115 mA	-	-	-
0 A	-10 mA *)		+ 10 mA*)	-10 mA*)		+ 10 mA*)	-10 mA *)		+ 10 mA*)
- 0.1 A	-	-	-	-115 mA		-85 mA	-115 mA		-85 mA
- 1 A	-	-	-	-1.15 A		-0.94 A	-	-	-
- 10 A	-	-	-	-10.6 A		-9.4 A	-	-	-

*) Internal tolerance

4 Service Instructions

(see circuit diagram No. 0844.3102 S)

4.1 Functional Description



Basic circuit diagram of the test adapter option CMT-Z6

The test adapter CMT-Z6 consists of the following sections:

- Voltage measurement input section (K1, N1, N2)
- Current measurement input section (K2, N3, N4A)
- Output section (N4B, N5)
- Control interface (D1to D4)
- Voltage supply (N6)

Voltage Measurement Input Section

The voltage measurement input section consists of a differential input stage with switch-selectable voltage gain. Unwanted input voltages due to offset or in-phase drive are determined by means of relay K1, which combines the voltage measurement inputs.

Current Measurement Input Section

Currents are measured via a 50 mΩ shunt. In the voltage range of ± 30 V, potential-independent measurements are obtained. To this end, the test voltage applied to capacitor C24 is first stored on the source potential and then by means of two relays taken to a ground reference, while at the same time the storage capacitors are disconnected from the shunts. Unwanted voltages again are determined using D3 by means of a short circuit across the input of amplifier N3 and later considered by software.

Output Section

The function of this section is to amplify the test voltage, which is switchable from the current path or the voltage path, and to apply it to the CMT.

Control Interface

A serial data channel with data, clock and strobe is converted into a parallel word. The relays and analog switches are driven by the control voltages.

Voltage Supply

The connecting plug only supplies + 5 V as operating voltage. However, the operational amplifiers are operated with ± 5 V. The integrated control switch N6 produces the lacking negative operating voltage.

4.2 Testing and Adjustment

Required measuring equipment and accessories:

2 Power supplies, e.g. NGAS 32/10
1 Digital voltmeter, e.g. UDL 44

Test purpose	Input	Test parameter	Setting	Output	Test result
Supply of voltage/ current	X3 B1 X3 A2	+ 5 V ± 0,25 V	---	P4	< 60 mA (after initialization, due to relays) V = -5 V ± 0.25 V
Current measure-ment path	X21 X22		**Bit 1 3 4 7**	X3 A3 X3 A2	
		0 mA	1 1 1 0		2 V ± 20 mV = ΔV_1 Offset
		0.1 A	1 1 1 1 *)		1.33 V + ΔV_1 ± 20 mV
		1 A	1 1 0 0		2 V ± 20 mV = ΔV_2 Offset
		1 A	1 1 0 1 *)		1.33 V + ΔV_2 ± 20 mV
		10 A	1 0 0 0		2 V ± 20 mV = ΔV_3 Offset
		10 A	1 0 0 1 *)		1.33 V + ΔV_3 ± 20 mV
		In-phase drive 0 V. Sampling test with in-phase drive 30 V.	*) Measurements must be performed within 0.1 to 0.5 sec. following switch-over due to discharge of current measurement capa-citor.		Same results as in the case of in-phase drive 0 V.
Voltage measure-ment path	X11 X12	**Test voltage** / **In-phase voltage**	**Bit 1 4 5 6**	X3 A3 X3 A2	
		0 / 0 V	0 1 1 0		2 V ± 20 mV
		0 / 30 V	0 1 1 0		2 V ± 1 V
		0 / -30 V	0 1 1 0		2 V ± 1 V
		100 mV / 0 V	0 1 1 0		2 V ± 20 mV = ΔV_1 Offset
		100 mV / 0 V	0 1 1 1		0.66 V + ΔV_1 ± 30 mV
		1 V / 0 V	0 1 0 0		2 V ± 20 mV = ΔV_2 Offset
		1 V / 0 V	0 1 0 1		0.66 V + ΔV_2 ± 30 mV
		10 V / 0 V	0 1 1 0		2 V ± 20 mV = ΔV_3 Offset
		10 V / 0 V	0 1 1 1		0.66 + ΔV_3 ± 100 mV

4.3 Interface Data

4.3.1 Software Interface

Bit	D2 Pin	Function	Data
0	4	no function	---
1	5	I/V measurement	0: Voltage 1: Current
2	6	no function	---
3	7	Amplification in the current measurement path	0: 0 dB 1: 20 dB
4	14	Amplification in the combined path	0: 0 dB 1: 20 dB
5	13	Amplification in the voltage measurement path	0: 0 dB 1: 20 dB
6	12	Wanted/unwanted voltage measurement in the V-path	0: unwanted 1: wanted
7	11	I-acquisition of test value/evaluation 0: C24 fitted at the test socket (simultaneous measurement of unwanted voltage) 1: charge on C24 is transferred to input N3 0 → 1: "charge transport"	0: acquisition 1: evaluation

4.3.2 Hardware Interface

Plug/Pin	Input (E) output (A) point (P)	Function	Data	Remarks
X21 X22	E E	Current measurement input(+) Current measurement input(-)	⌝ 0 to ± 10 A with 0 to ± 30 V ⌟ relative to ⊥	
X11 X12	E E	Voltage measurement input(+) Voltage measurement input(-)	⌝ 0 to ± 30 V ⌟	
X3 A2	E	⊥	---	
X3 B2	A	Option poll at D 2.6	---	
X3 B1	E	+ 5 V supply	+ 5 V ± 0,25 V I < 60 mA	after initialization
X4 B2 X4 A2 X4 A1	E E E	Data Clock Strobe	TTL TTL TTL	
X3 B3 X4 B1	---	Coding	---	
X3 A3 X3 A2	A A	Test output Test reference ground	0 to 4 V	
P1 P2 P3 P4	P P P P	Test voltage for voltage Test voltage for current Test voltage for combined path negative operating voltage	-2 to + 2 V -2 to + 2 V -2 to + 2 V -5 V ± 0.25 V	

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Schaltteillisten
Stromläufe
Bestückungspläne

Part lists
Circuit diagrams
Components plans

Listes des pièces détachées
Schémas de Circuit
Plans des composants

(R 29500 Bl 2)
685.1808 BL 2

Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
.	ZUGEH.STROML./CIRC.DIAGR. 844.3102/S				
A1	ED DC-MESSUNG DC-MEASURE-PART	844.3102.02			
R21	RD 8W 0,05 OHM+-1% GEH. WIRE WOUND RESISTOR	RD 689.8824	DALE	RH-10 0,050HM 1%	
W150	DX MEMORYKABEL MEMORY CABLE	844.3402			
X11	VK RAENDELKL.ISOL.ROT KNURLED CLAMP	VK 219.5300	ELMA	BV 42267	
X12	VK RAENDELKL.ISOL.SCHWARZ KNURLED CLAMP	VK 219.5316	ELMA	BV 42268	
X21	VK RAENDELKL.ISOL.BLAU KNURLED CLAMP	VK 219.5339	ELMA	BV 42270	
X22	VK RAENDELKL.ISOL.BLAU KNURLED CLAMP	VK 219.5339	ELMA	BV 42270	
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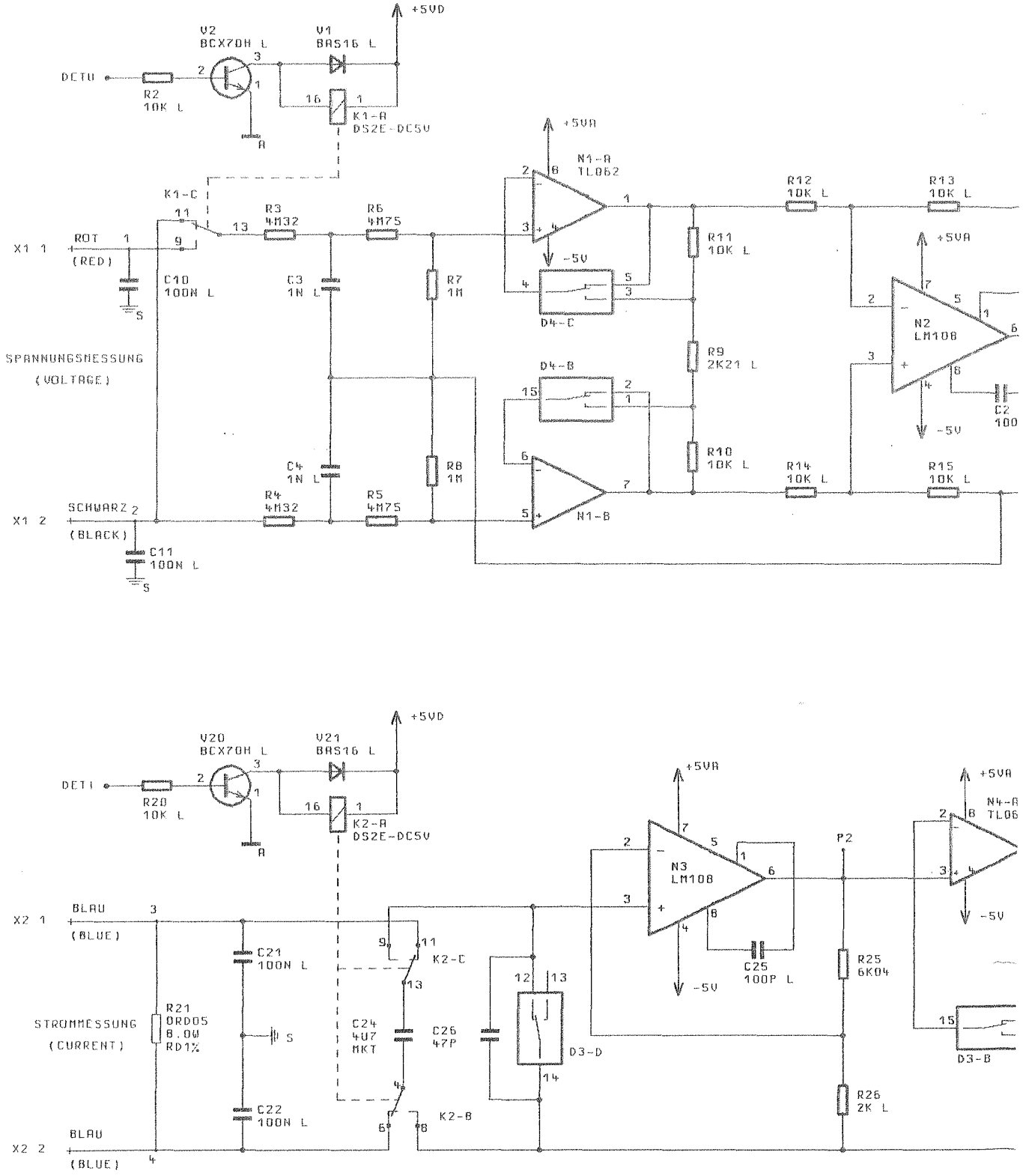
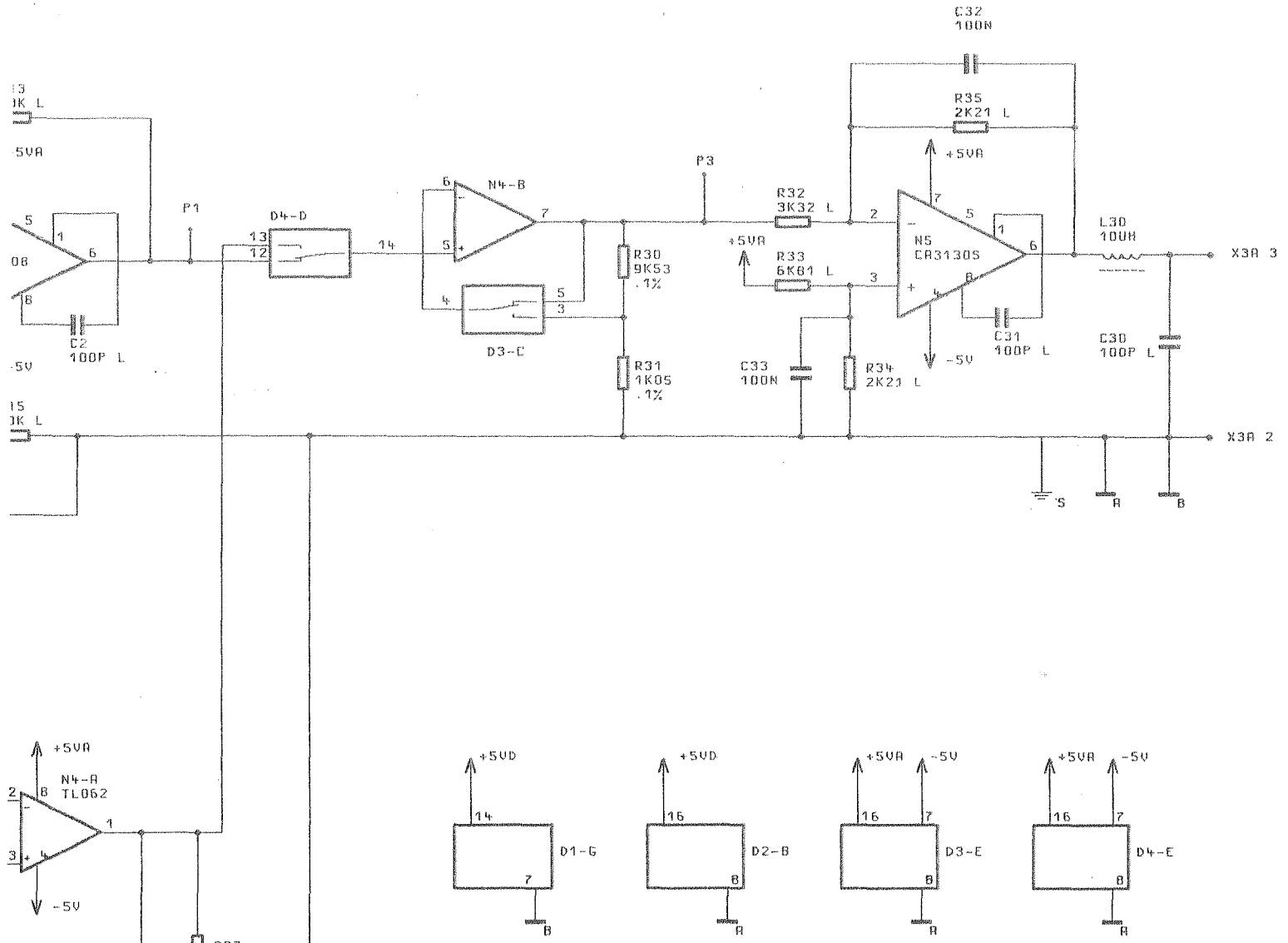
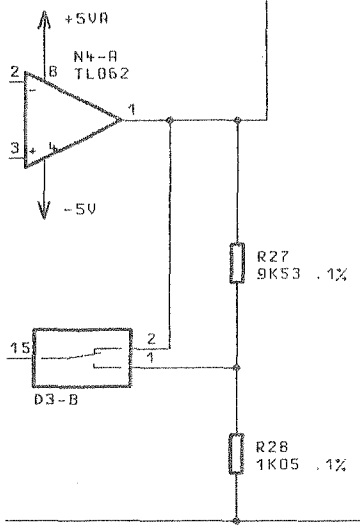
Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C2	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 099.8415	VITRAMON	VJ1206 A 101 F FAT	
C3	CC 1NF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 007.7398	VITRAMON	VJ1206 A 102 F FAT	
C4	CC 1NF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 007.7398	VITRAMON	VJ1206 A 102 F FAT	
C10	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 007.5237	VITRAMON	VJ1206 Y 104 K FAT	
C11	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 007.5237	VITRAMON	VJ1206 Y 104 K FAT	
C21	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 007.5237	VITRAMON	VJ1206 Y 104 K FAT	
C22	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 007.5237	VITRAMON	VJ1206 Y 104 K FAT	
C24	CK 4,7UF+-10% 63V QUADER CAPACITOR	CK 024.7005	ROEDERST	MKT1822-547/06/10%	
C25	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 099.8415	VITRAMON	VJ1206 A 101 F FAT	
C26	CC 47PF+-2%5X6NPO CAPACITOR	CC 087.6506	VALVO	2222 678 10479	
C30	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 099.8415	VITRAMON	VJ1206 A 101 F FAT	
C31	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 099.8415	VITRAMON	VJ1206 A 101 F FAT	
C32	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C33	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C40 ..45	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 099.8521	VITRAMON	VJ1206 Y 103 K FAT	
C50	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 007.5237	VITRAMON	VJ1206 Y 104 K FAT	
C51	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C52	CE 10UF -10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 022.7650	ROEDERST	ELKOEK10/63	
C53	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C54	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C55	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C56	CE 10UF -10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 022.7650	ROEDERST	ELKOEK10/63	
D1	BL MM74HC14N 6XINV.SCHM HEX INV.SCHMITT TRIGGER	BL 099.9492	NSC	MM74HC14N	
D2	BL PC74HC4094P 8ST.SH.REG 8ST.SHIFT A.STORE REGIST.	BL 099.9711	VALVO	PC74HC4094P	
D3	BL PC74HC4053P 3X2CH.MUX ANALOG MULTIPLEXER	BL 807.6247	TEXAS	SN74HC4053N	
D4	BL PC74HC4053P 3X2CH.MUX ANALOG MULTIPLEXER	BL 807.6247	TEXAS	SN74HC4053N	
K1	SN GEPOLT 2XUM 5V RELAIS 5V DC	834.9089	SDS	DS2E-5V	
K2	SN GEPOLT 2XUM 5V RELAIS 5V DC	834.9089	SDS	DS2E-5V	
L30	LD 10 UH 10% 3R3 144 MA CHOKE	LD 026.4184	DELEVAN	DROSSEL1025-44	
L40	LD 47,0UH10%4,500HMO,110A CHOKE	LD 067.3060	DELEVAN	DROSSEL1025-60	
L42	LD 47,0UH10%4,500HMO,110A CHOKE	LD 067.3060	DELEVAN	DROSSEL1025-60	
L44	LD 47,0UH10%4,500HMO,110A CHOKE	LD 067.3060	DELEVAN	DROSSEL1025-60	
L50	LD 10 UH 10% 3R3 144 MA CHOKE	LD 026.4184	DELEVAN	DROSSEL1025-44	
L51	LD 10 UH 10% 3R3 144 MA CHOKE	LD 026.4184	DELEVAN	DROSSEL1025-44	
L52	LD 10 UH 10% 3R3 144 MA CHOKE	LD 026.4184	DELEVAN	DROSSEL1025-44	
L54	LD 10 UH 10% 3R3 144 MA CHOKE	LD 026.4184	DELEVAN	DROSSEL1025-44	
N1	BO TL062ACP 2XFET OPAMP OPERATIONAL AMPLIFIER	653.2832	TEXAS INST	TL062ACP	

Kennz. Comp.No.	Benennung Designation		Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
N2	BO LM108J-8 PREC. OPAMP OPERATIONAL AMPLIFIER		354.5261	MOTOROLA	LM108J8	
N3	BO LM108J-8 PREC. OPAMP OPERATIONAL AMPLIFIER		354.5261	MOTOROLA	LM108J8	
N4	BO TL062ACP 2XFET OPAMP OPERATIONAL AMPLIFIER		653.2832	TEXAS INST	TL062ACP	
N5	BO CA3130S PMOS OPAMP OPERATIONAL AMPLIFIER		303.9282	RCA	CA3130S	
N6	BJ ICL7660IJA +TO- CONV NEG.VOLTAGE CONVERTER		669.2908	MAXIM	ICL7660IJA	
01 ..4	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL	078.2747	-	R&S-ZCHNG.078.2747	
P1 ..4	VL WIRE-WRAP PIN WIRE-WRAP PIN	VL	088.4542	BERG	NR. 75 403-003	
R2	RG 10 KOHM+-1%TK100 1206 CHIP RESISTOR	RG	007.0793	DALE	CRCW1206 10,0KOHM FT	
R3	RL 0,35W4,32MOHM+-1%TK50 METALFILMRESISTOR	RL	099.8244	RESISTA	MK2 4,32MOHM 1% TK50	
R4	RL 0,35W4,32MOHM+-1%TK50 METALFILMRESISTOR	RL	099.8244	RESISTA	MK2 4,32MOHM 1% TK50	
R5	RL 0,35W4,75MOHM+-1%TK50 METALFILMRESISTOR	RL	099.8250	RESISTA	MK2 4,75MOHM 1% TK50	
R6	RL 0,35W4,75MOHM+-1%TK50 METALFILMRESISTOR	RL	099.8250	RESISTA	MK2 4,75MOHM 1% TK50	
R7	RL 0,35W 1MOHM+-1%TK50 RESISTOR	RL	082.7862	DRALORIC	SMA0207/1M-F-D	
R8	RL 0,35W 1MOHM+-1%TK50 RESISTOR	RL	082.7862	DRALORIC	SMA0207/1M-F-D	
R9	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5743	DALE	CRCW1206 2,21KOHM FT	
R10 ..15	RG 10 KOHM+-1%TK100 1206 CHIP RESISTOR	RG	007.0793	DALE	CRCW1206 10,0KOHM FT	
R20	RG 10 KOHM+-1%TK100 1206 CHIP RESISTOR	RG	007.0793	DALE	CRCW1206 10,0KOHM FT	
R25	RL 0,35W 6,04KOHM+-1%TK50 RESISTOR	RL	082.6089	DRALORIC	SMA 0207/6,04OHM-F-C	
R26	RG 2,0 KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5737	DALE	CRCW1206 2,0KOHM F T	
R27	RL 0,35W9,53KOHM+-0,1%T25 RESISTOR	RL	084.3029	DRALORIC	SMA0207	
R28	RL 0,35W1,05KOHM+-0,1%T25 RESISTOR	RL	083.9181	DRALORIC	SMA0207	
R30	RL 0,35W9,53KOHM+-0,1%T25 RESISTOR	RL	084.3029	DRALORIC	SMA0207	
R31	RL 0,35W1,05KOHM+-0,1%T25 RESISTOR	RL	083.9181	DRALORIC	SMA0207	
R32	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5789	DALE	CRCW1206 3,32KOHM FT	
R33	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG	007.0758	DALE	CRCW1206 6,81KOHM FT	
R34	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5743	DALE	CRCW1206 2,21KOHM FT	
R35	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5743	DALE	CRCW1206 2,21KOHM FT	
R40	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5820	DALE	CRCW1206 4,75KOHM FT	
R41	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5820	DALE	CRCW1206 4,75KOHM FT	
R42	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG	007.5820	DALE	CRCW1206 4,75KOHM FT	
R45 ..47	RL 0,21W 4,75KOHM+-1%TK50 RESISTOR	RL	092.1521	RESISTA	MK1 4K75 1% TK50	
V1	AD BAS16 75V 0A25 UDI DIODE	AD	007.4924	VALVO	BAS16	
V2	AK BCX70H N 45V 200MA TRANSISTOR	AK	007.3105	VALVO	BCX70H	
V20	AK BCX70H N 45V 200MA TRANSISTOR	AK	007.3105	VALVO	BCX70H	
V21	AD BAS16 75V 0A25 UDI DIODE	AD	007.4924	VALVO	BAS16	
X5	DX KABEL CONNECTOR UNIT		844.3154			

Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
X6	DX KABEL CONNECTOR UNIT	844.3154			
X3A	FP INDIREKT.STECKERL.36P. 3-POLIG PIN CONNECTOR	FP 242.3600	BINDER	742-5-11-0178-00-36	
X3B	FP INDIREKT.STECKERL.36P. 3-POLIG PIN CONNECTOR	FP 242.3600	BINDER	742-5-11-0178-00-36	
X4A	FP INDIREKT.STECKERL.36P. 2-POLIG PIN CONNECTOR	FP 242.3600	BINDER	742-5-11-0178-00-36	
X4B	FP INDIREKT.STECKERL.36P. 2-POLIG PIN CONNECTOR	FP 242.3600	BINDER	742-5-11-0178-00-36	
					- ENDE -

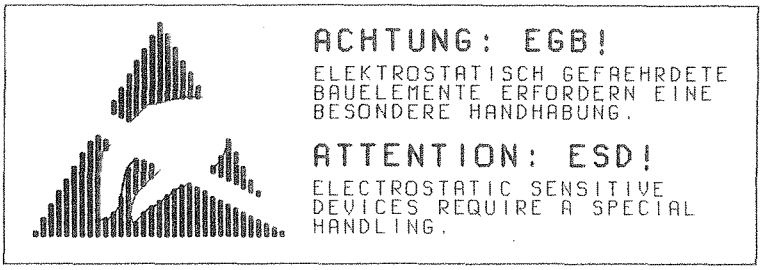

+5VD
V2
BCX70H L
V1
BAS16 L
DETU
R2
10K L
K1-A
DS2E-DC5V
K1-C
+5VA
N1-A
TL062
R12
10K L
R13
10K L
R3
4M32
R6
4M75
R11
10K L
X1 1
ROT
(RED)
C10
100N L
C3
1N L
R7
1M
-5V
D4-C
+5VA
N2
LM108
SPANNUNGSMESSUNG
(VOLTAGE)
D4-B
R9
2K21 L
C2
100
-5V
C4
1N L
R8
1M
R10
10K L
R14
10K L
R15
10K L
R4
4M32
R5
4M75
N1-B
X1 2
SCHWARZ
(BLACK)
C11
100N L
+5VD
V20
BCX70H L
V21
BAS16 L
DETI
R20
10K L
K2-A
DS2E-DC5V
+5VA
+5VA
N4-A
TL06
X2 1
BLAU
(BLUE)
C21
100N L
K2-C
N3
LM108
P2
C25
100P L
R25
6K04
-5V
-5V
STROMMESSUNG
(CURRENT)
R21
0RD05
8.0W
RD1%
C24
407
MKT
C26
47P
D3-D
D3-B
C22
100N L
K2-B
R26
2K L
X2 2
BLAU
(BLUE)

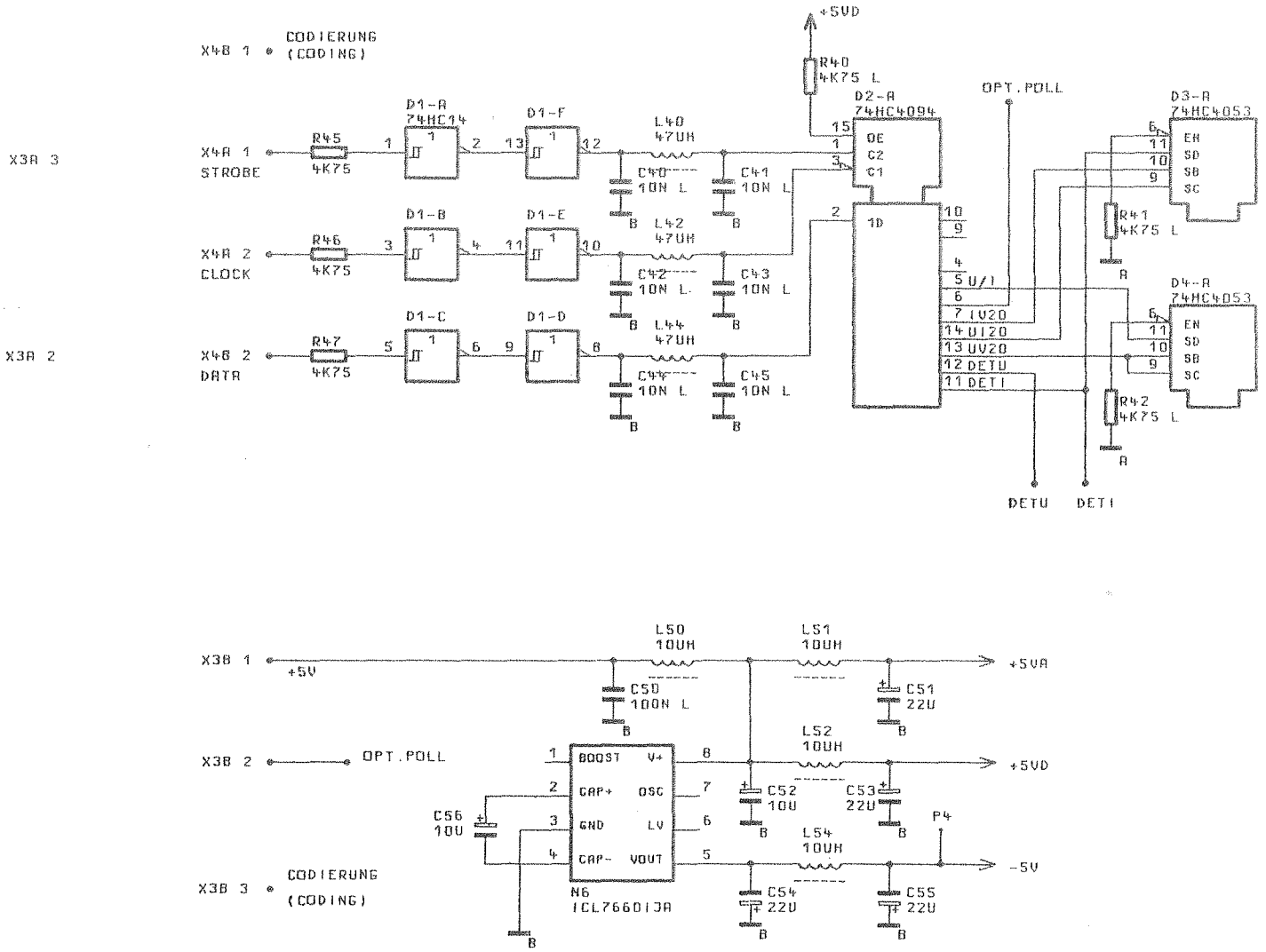

C32
100N
R35
2K21 L
+5VA
P3
R32
3K32 L
N4-B
P1
D4-D
R30
9K53
.1%
+5VA
R33
6K81 L
N5
CA3130S
L30
10UH
X3A 3
C2
100P L
D3-C
R31
1K05
.1%
C33
100N
R34
2K21 L
-5V
C31
100P L
C30
100P L
X3A 2
S
A
B


+5VA
N4-A
TL062
-5V
R27
9K53 .1%
D3-B
R28
1K05 .1%

+5VD
D1-G
+5VD
D2-B
+5VA
-5V
D3-E
+5VA
-5V
D4-E

S1
C1


ACHTUNG: EGB!
ELEKTROSTATISCH GEFAEHRDETE BAUELEMENTE ERFORDERN EINE BESONDERE HANDHABUNG.
ATTENTION: ESD!
ELECTROSTATIC SENSITIVE DEVICES REQUIRE A SPECIAL HANDLING.



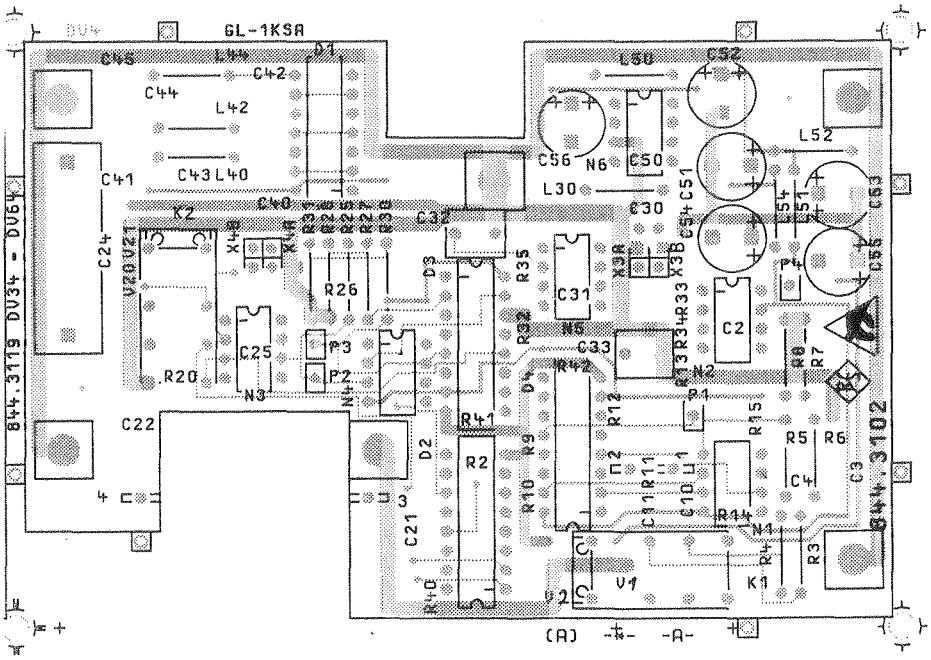
STROMLAUF GILT FUER VAR.02

CIRCUIT DIAGRAM IS VALID FOR MOD.02

A	39000	6.88	GL	1KGA	TAG	NAME	BENENNUNG
B	39000	6.88	CO	BEARB.		GL	DC-MESSUNG
				GEPR.		GL	DC-MEASURE-PART
				NORM			
				PLOTT	8. 7.88	*	
				ROHDE&SCHWARZ			ZEICHN.-NR. 844.3102.01S
AEND. IND.	AENDERUNGS-MITTEILUNG	DATUM	NAME	ZU GERAET	CMTZ6		REG.I.V. 844.3002 ERSTE Z.

BLATT-NR. 1 V. 1 BL.

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side

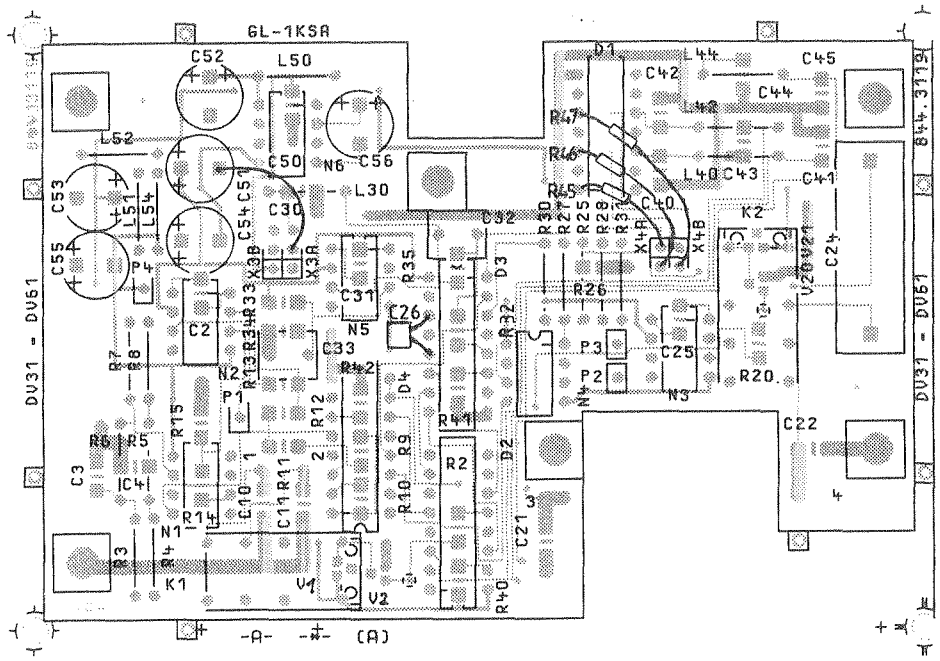


(therm HVC 250)

ACHTUNG: EGB!
Elektrostatisch gefährdete Bauelemente erfordern eine besondere Handhabung.

ATTENTION ESD!
Electrostatic sensitive devices require a special handling.

Ansicht und Leitungsführung Lötseite
View of tracks on solder side



VARIANTENERKLÄRUNG/VERSION
VAR 02 – GRUNDAUSFÜHRUNG/BASIC MODEL

A 39000 11.88 GL	Maße ohne Toleranzangabe	Maßstab 1 : 1	
		Halbzeug Werkstoff	
	1KGA ag Name	Benennung	
	Bearb 02.88 GL	DC - MESSUNG	Z
	Gepr	DC - MEASURE - PART	
	Norm		
	ROHDE & SCHWARZ	Sach-Nr 844.3102.01 ED	Blatt-Nr 2
Änd Änderungsbez Datum	Allgemeintoleranz CMTZ 6	Ers 844.3002 V	Ersatz für