

NSG 432

MANUAL
STATIC DISCHARGES
SIMULATOR

SCHAFFNER

ELECTROSTATIC DISCHARGE SIMULATOR SYSTEM

NSG 432

OPERATING AND PROGRAMMING INSTRUCTIONS

Achtung

Dieses Gerät darf nicht von Trägern von Herzschrittmachern verwendet werden.

Berühren der Testspitze und Montage von Zubehör nur bei ausgezogenem Netzstecker **und** nach Entladung des Gerätes.

Warning

This equipment must not be used by persons fitted with a heart pace-maker.

Do **not** touch the test finger nor attach the accessories **before** you unplug the unit from the mains **and** discharge it fully.

Attention

Cet appareil ne doit pas être utilisé par des porteurs de stimulateur cardiaque.

Ne touchez pas la sonde d'essais et ne montez pas d'options sans l'avoir déchargé **et** déconnecté du réseau.

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1 Introduction

1.1 General

Under certain atmospheric conditions, objects or people can charge themselves with electrical energy. This effect can be associated with the field of electrostatics. The phenomenon of "Electrostatics" was already known in ancient times. Thales of Milet (600 B. C.) observed that amber when rubbed attracted very light particles. When conducting objects touch each other, an arc is drawn which produces a compensating action with short but intensive electromagnetic fields.

The effect can be explained as follows:

When two insulating materials with different dielectric constants are rubbed against each other, the materials charge up, i.e. one material gives up electrons to the other insulating material. Such an effect is described as electrostatic charging. The same can happen to a person. If he moves in a dry atmosphere on a well insulated carpet, he can charge himself to several thousand volts. Upon approaching a conducting object his potential is discharged via the conductor with intensive arcing.

The fast compensating current which is produced and its associated high electromagnetic fields can cause malfunctioning or even destroy electrical circuits (computers, terminals, automobile electronics, etc.).

This is very often the case in data processing systems. The system dissipation in most cases is given up to the surroundings as heat, which results in a large drop in the relative humidity, generally under 50%. The danger is very great that in such surroundings the operating personnel can electrostatically charge themselves up. If equipment e.g. a control desk is touched, then the person is discharged which is felt as a slight electrical shock. The electrical action, however, is often intensive enough if a system is insufficiently protected to cause interference which often shows up as a program error or loss of data.

Systematic testing of such "interference susceptible" electrical systems has become a necessity today if the economic disadvantages cannot be accepted.

A simulation set-up must be constructed so that conditions existing in practice are reproducible; e.g. a sensible reconstruction of the human body and its discharge paths. Further, the values obtained (interference susceptibility level) must be reproducible.

1.2 Areas of application

The test generator NSG 432 can be used to simulate the effect of direct electrostatic discharges on electronic equipment or the ones produced by discharges between objects in the neighborhood of the equipment.

The application area covers:

- Prototype testing
- Research and development
- Production testing (routine tests)
- Testing of complete installations.

1.3 Effect on test object

The test object is affected mainly by:

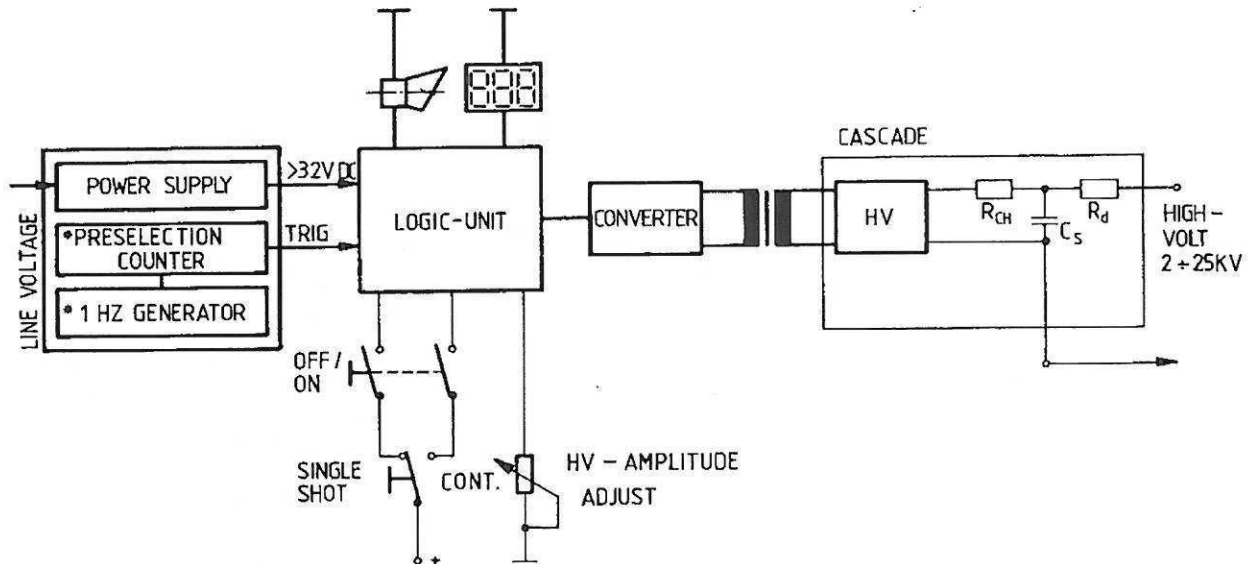
- Magnetic coupling between line loops in the electronics and the discharge current path.
- The discharge current flows away from the test object via all lines (ground, mains, data, shield etc.) depending on impedance.
This results in a direct electrical coupling to the affected current circuits.

Malfunctioning in any type of fast digital memories is indicated e.g. by:

- Program crash
- Latch up
- Wrong commands
- Partial Reset in systems (e.g. only I/O IC's)
- destruction of Interface Chips
- destruction of unprotected MOS Components.

Usually the ESD test discovers all the weak points of equipment mainly in the HF range. It is therefore a very fast and inexpensive "GO-NO-GO" test. It is recommended to test each installation with ESD on acceptance, since the manufacturing and installation personnel do not know the effect of their "work" on the HF connections and thus do not take this into account.

1.4 Mode of operation



* ONLY IN VERSION
POWER SUPPLY WITH
PRESELECT COUNTER

Fig. 1.4-1

A power supply that can work from 100, 120, 220 and 240 VAC supplies the generator with a DC voltage (35–40 VDC). The output voltage is continuously adjustable with the knob "HV Level" over the range 2 kV to 25 kVDC and is displayed on the built-in digital voltmeter. Three modes of operation can be selected with the toggle switch "Cont-Single" as follows:

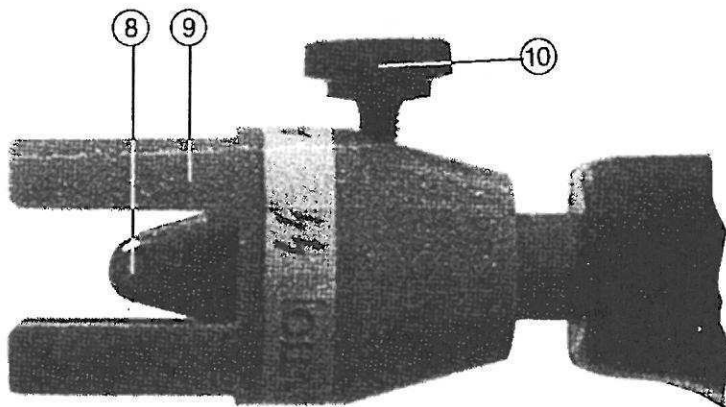
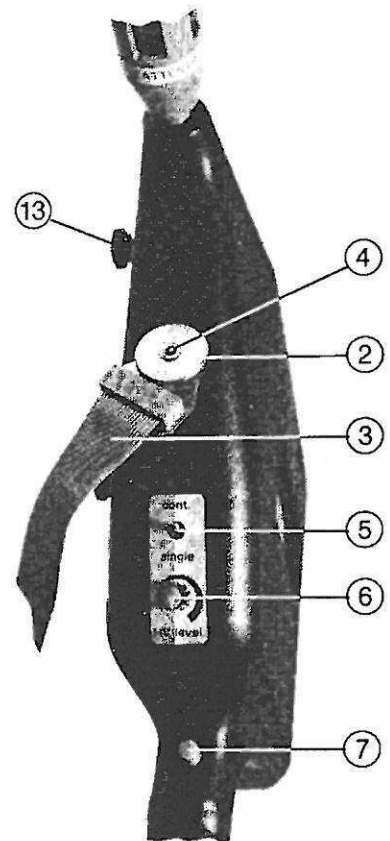
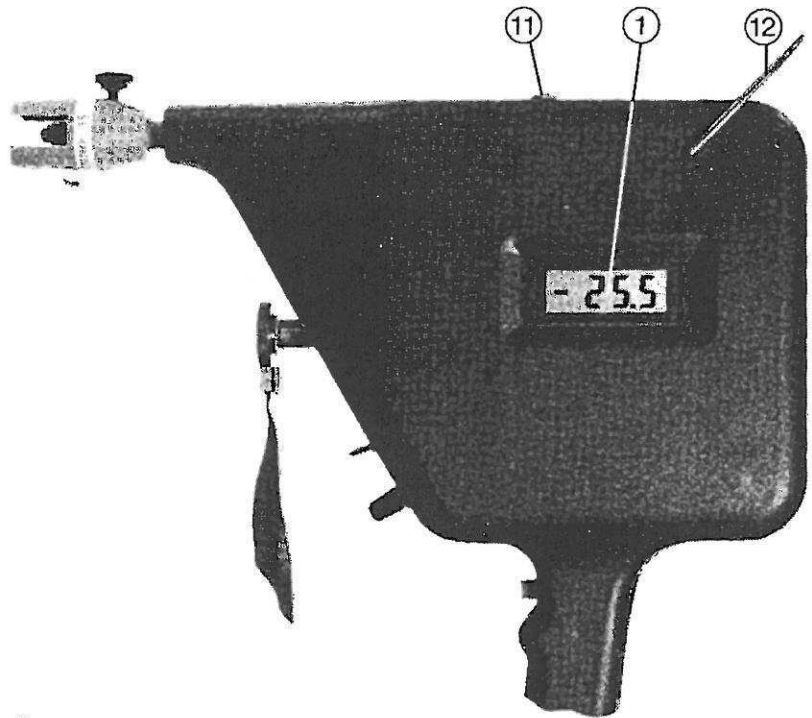
- "Cont" for repetitive discharges (approx. 10 Hz)
- "Single" for single discharge
- "Preselect" for a preselectable number of single discharges.

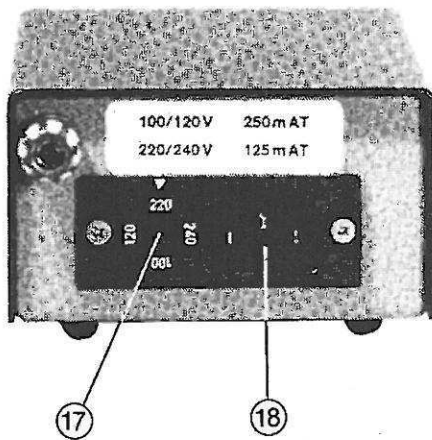
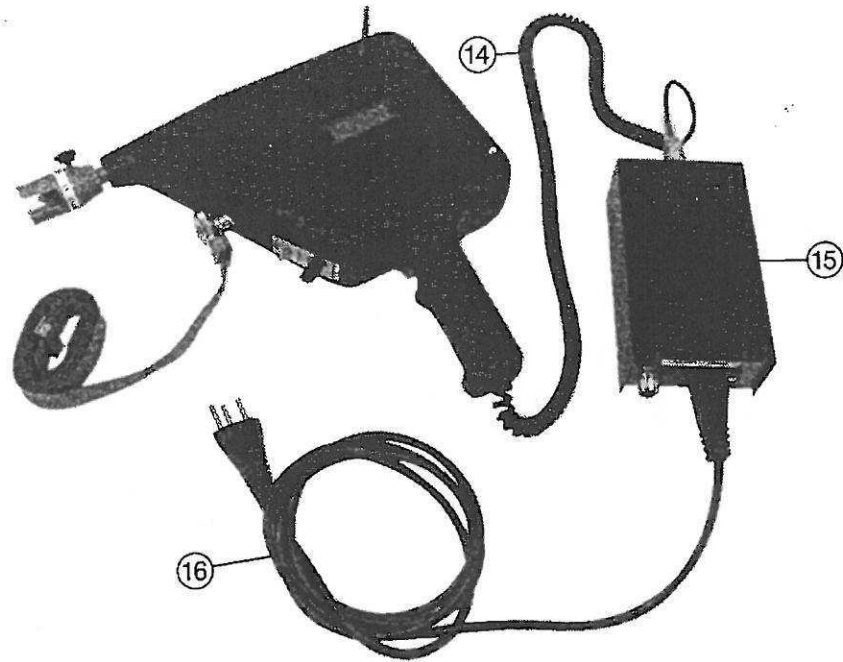
The distance between the test object and the test finger, depending on the test voltage, can be set by means of a distance ring. High voltage generation is done by pressing the button on the hand grip of the generator.

The same accessories are used for the NSG 430, NSG 431 and NSG 432. Preselect counter, 1 Hz generator and external triggering operate only in conjunction with NSG 432.

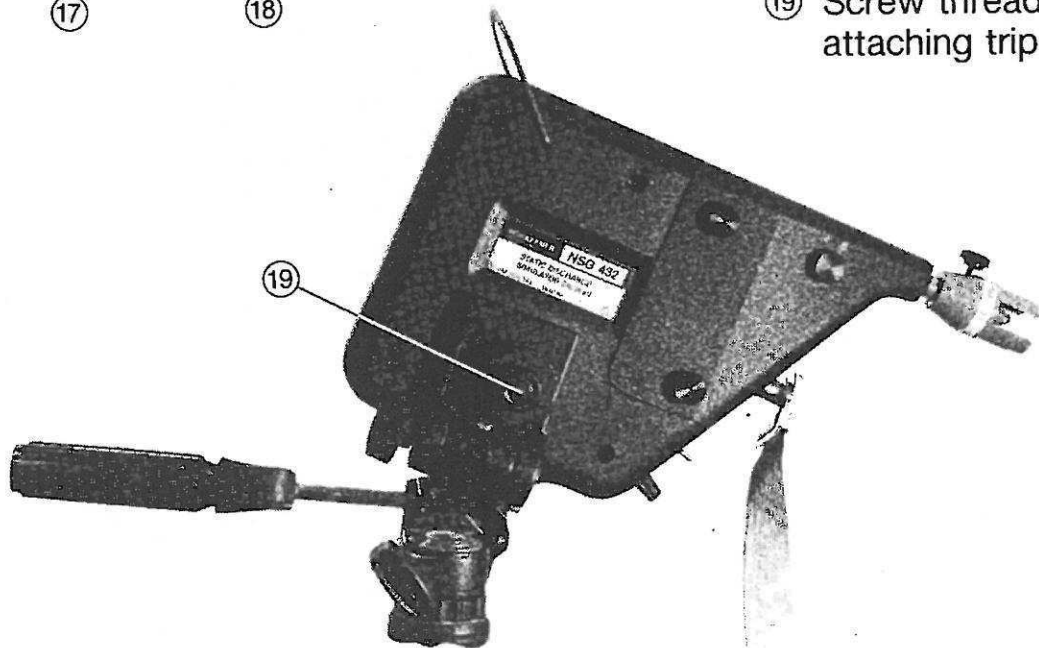
2 Operating controls

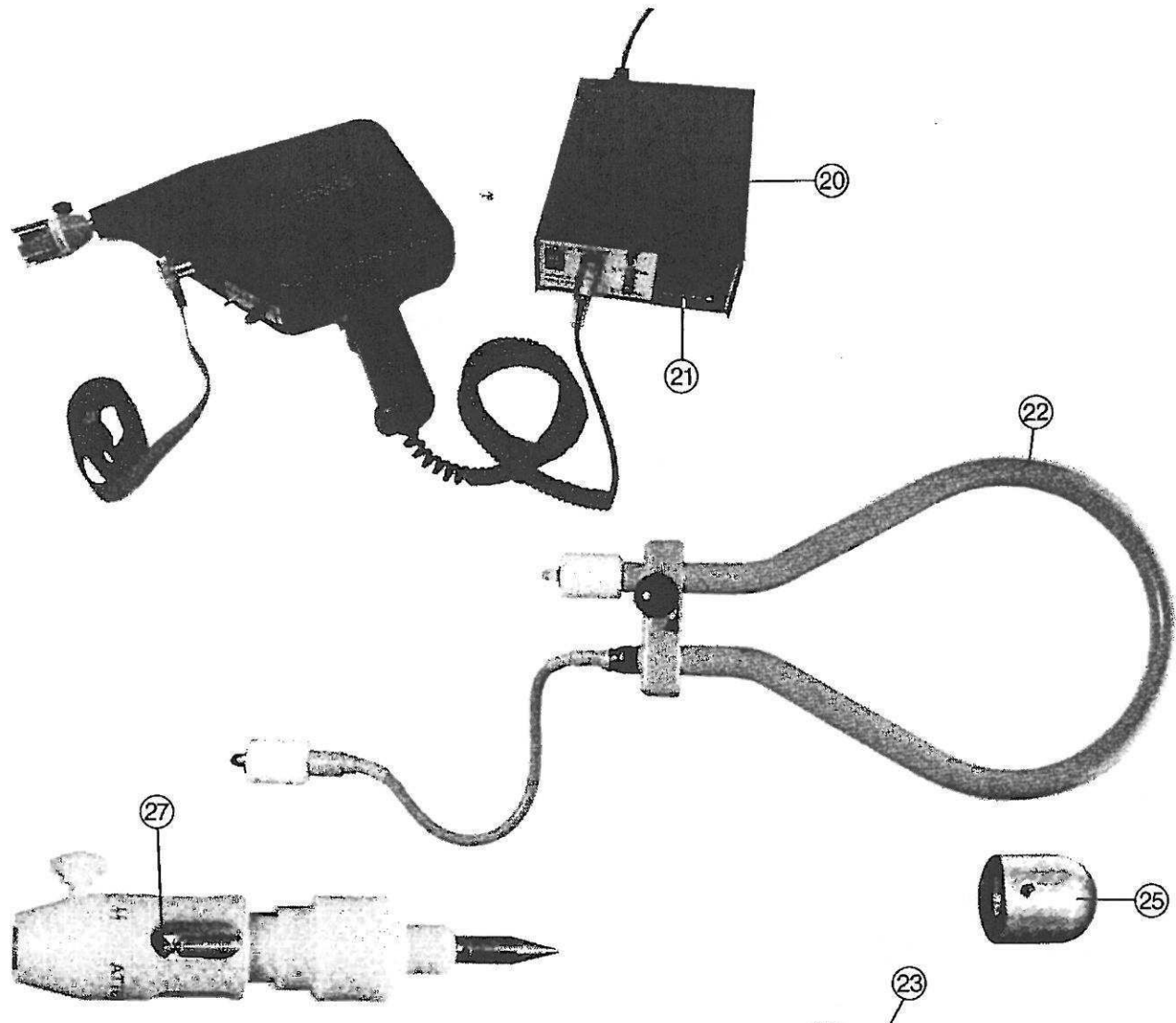
- ① Display instrument (digital voltmeter)
- ② Ground connection
- ③ Ground cable
- ④ Ground connection for laboratory cable
- ⑤ Change-over switch "cont/single"
- ⑥ HV level setting
- ⑦ Button ON/OFF
- ⑧ Test finger (IEC standard)
- ⑨ Distance ring
- ⑩ Locking screw
- ⑪ Connecting socket for option
- ⑫ Suspension sling
- ⑬ HV cascade interchangeable using thumb screws. (Pos. or neg. polarity, different discharge networks.)



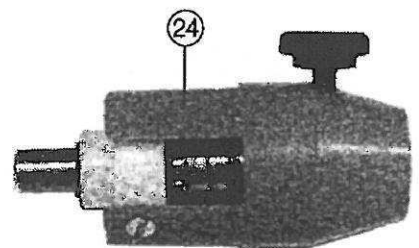


- ⑭ spiral cable
- ⑮ Power supply (standard)
- ⑯ mains cable
- ⑰ Voltage selector with fuse
- ⑱ mains connection
- ⑲ Screw thread for attaching tripod





- ②① Power supply with preselect counter
- ②② preselect counter
- ②③ H-Field adapter
- ②④ E-Field adapter
- ②⑤ Coupling piece
- ②⑥ Discharge ball 25 mm
- ②⑦ Discharge ball 25 mm
E-Field adapter
- ②⑧ Mountable discharge gap adjustable



3 Operating Instructions

3.1 Safety precautions

Operator:

The operator is protected* by keeping the discharge parameters within the maximum limits under IEC regulation 348.

Operators with *heart pace makers* are not permitted to operate the equipment!

Directives:

- The test finger must be discharged before use. HV capacitors are not provided with discharge resistors in order to maintain the holding time according to IEC!
- The test finger must be discharged after use.
- Grounding is compulsory (protection class 1).
- Only use equipment in a dry atmosphere room.
- Equipment with faulty casing must not be used.
- "Emergency repairs" are insufficient to meet safety regulations.

Equipment in the neighbourhood which has not been checked can also be affected by the test.

Note:

The high voltage feed back must always be made via the ground connection ②/④. If discharges are made directly to ground without terminal ②/④ being connected to ground, serious interference might occur in surrounding electronic installations. It is also possible that the NSG 432 will be damaged.

3.2 Operation

Before putting the generator into service place the right HV body model ⑬. Then the following checks must be done:

- a) Set the voltage selector ⑰ of the power supply ⑮ to correct voltage value and insert the correct fuse.
- b) Connect mains unit only to a supply plug with protection ground conductor.
- c) Connect ground cable ③ at ground connection ② with test object or with ground.
- d) Set HV level ⑥ to minimum position.
- e) Connect test pistol with cable ⑭ to power supply ⑮
- f) As safety precaution the test finger ⑧ should be discharged to ground.

3.3 Operating principle

3.3.1 General

The test generator NSG 432 can be operated in various modes:

- Single discharges
- Repetitive discharges
- Continuous operation for a period of time
- Preselection

3.3.2 Single discharges

- a) Switch ⑤ to position “Single”.
- b) Set the desired discharge voltage by means of knob ⑥. The value selected (2-25 kV $\pm 10\%$) can be read on the built-in digital voltmeter ①.
- c) The test finger ⑧ must be discharged to ground after each reduction of setting of the knob ⑥.
- d) With button ⑦ the discharge capacitor C_s is charged once.
- e) *Quickly approach* the test object with the test finger until contact is made to ensure a definite discharge even with low voltages.

3.3.3 Repetitive discharges

- a) Switch ⑤ to position “Cont”. The repetition frequency is, depending on amplitude and distance to test object, approx. 10 Hz.
- b) Set the desired discharge voltage by means of knob ⑥. The value selected (2-25 kV $\pm 10\%$) can be read on the built-in digital voltmeter ①.
- c) The test finger ⑧ must be discharged to ground after each reduction of the setting knob ⑥ (the capacitor could remain charged at a higher voltage).
- d) To guarantee repetitive discharges, a minimum distance (as a rule 0.3–1.5 kV/mm) must be maintained so that the discharge capacitor can be recharged. The necessary distance can be set on the distance ring ⑨ using a depth gauge.
- e) To switch on the high voltage the button ⑦ must be kept depressed.

3.3.4 Operation for a period of time

The ESD test generator type NSG 432 was developed for regular practice of intermittent short duration. Long term tests, *exceeding 1 h, may be performed in automatic 1 Hz operation mode only* (see 3.3.5).

Alternatively, the operation mode “Repetitive discharge” can be selected without continuously depressing the button ⑦ for a *limited* time as follows:

- a) Switch ⑤ in position "Cont".
- b) Set the desired discharge voltage with knob ⑥.
- c) Depress button ⑦ and holding this, set ⑤ to position "single". Continuous operation is then switched on.
- d) Release button ⑦ The equipment will continue to operate!
- e) The test finger must be discharged to ground after each reduction of the discharge voltage.
- f) The continuous operation mode can be switched off by switching ⑤ to position "cont". Button ⑦ doesn't need to be touched.

3.3.5 Preselection

With the option "power supply with preselect counter" you have the possibility to program a preselected number of single discharges and release them

- automatically with 1 Hz* repetition
or
- externally triggered

After reaching the required number of single discharges the mode is terminated.

* Other values (1 Hz–0.05 Hz) are possible, see chapter "Service Information".

I Automatic repetition

- a) Program the counter (see operation of the options). With automatic repetition or external triggering of the single discharges without premature end switch off, the preselect value must be set to 999999.
- b) Set toggle switch of power supply to position "EXT TRIG".
- c) Set change-over switch ⑤ on the test generator to position "Single".
- d) Using the "set" button of the counter will reset it to zero.
- e) When the toggle switch of the power supply is turned to position "1 Hz" the test commences.
- f) When the programmed number of single discharges is reached the test is terminated.
- g) By depressing the "set" button on the counter, the test begins again.

II External triggering

- a) Program the counter (see operation of the options). With automatic repetition or external triggering of the single discharges without premature end switch off, the preselect value must be set to 999999.
- b) Set toggle switch of power supply to position "EXT TRIG".
- c) Set change-over switch ⑤ on the test generator to position "Single".
- d) Using the "set" button of the counter will reset it to zero.

- e) A single discharge is released with a logic 1 signal (12–15 V).
- f) When the programmed number of single discharges is reached the test is terminated.
- g) By depressing the “set” button on the preselect counter the test begins again.

3.3.6 Arcing recognition

In position “single” of switch ⑤ discharges to HV ground ④ are indicated by an acoustic alarm.

When several discharges occur one after another, however, each single discharge cannot be identified separately.

3.3.7 Mounting on tripod

A nut with thread UNC 1/4–20, provided laterally in the housing, might serve for mounting the NSG 432 on a tripod (e.g. type such as used for cameras).

See operating controls ⑱.

3.4 Options

3.4.1 General

At present the following options are available for the NSG 432 generator:

- Power supply with preselect counter	402-579
- H-Field Adapter, requires 402-598	402-587
- E-Field Adapter	402-586
- Mountable discharge gap adjustable	402-598
- Measuring accessory to IEC 801-2	402-283
- Discharge ball 25 mm push fit	402-593
- Discharge ball 25 mm for E-Field Adapter	402-603

3.4.2 Power supply with preselect counter



Fig. 3.4.2-1

This equipment has the same power supply as the equipment without preselect counter. In addition to the counter, it features a 1 Hz generator and a trigger input for external single pulse release. The applications are described under 3.3.5 *Preselection*.

Programming the counter



Fig. 3.4.2-2

Preselection:

Setting of the preselector is done with the two right-hand buttons on the front of the counter.

2nd button from the right (←):

Firstly the decade is selected which should be changed. Each time the button is depressed the selected position is moved one place to the left. After going through all places the operation repeats itself. When continuously depressed, the decade displacement, after approx. 1 sec, moves automatically through at a rate of 5 Hz. The instantaneous decade chosen is shown by greater brightness.

1st button from right (↑):

Each depression of the button increases the selected digit by one. Continuous depression causes after approx. 1 sec automatic advance at a frequency of 5 Hz. In this manner the required preselection can be done, which is immediately handled by the counter, no further button needs to be depressed. After approx. 5 sec after the last depression of a button the actual counter state is displayed. Even during a preselect change the counting can continue.

2nd button from the left (EYE):

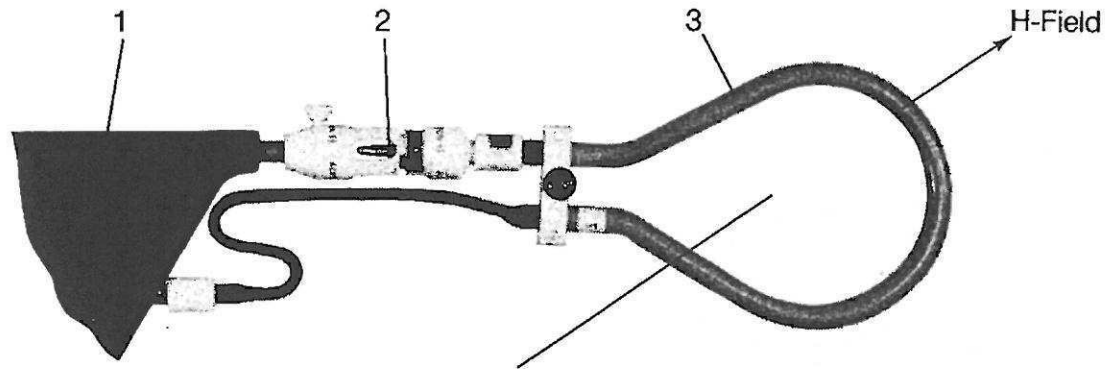
To check the preselection setting without changing it. After releasing the button the actual counter state is displayed immediately again.

1st button from the left (set):

Each depression of the button sets the counter state to zero.

3.4.3 H-Field adapter (magnetic field)

The H-Field adapter enables testing with an exact H-Field orientation. The current pulse is switched on by the spark gap, and is determined by its arc ignition voltage as well as the current amplitude.



$$\text{Field strength } H \approx V_{\text{ign}} * \frac{1}{30} \text{ (A/m)}$$

1 = NSG 43x

2 = Spark gap 402-598

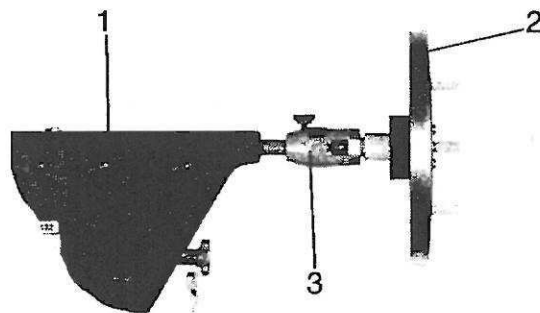
3 = H-Field adapter 402-587

Fig. 3.4.3-1

3.4.4 E-Field adapter (Electrical field)

The E-Field adapter enables testing with an exact E-Field orientation.

Static E-Field



1 = NSG 43x

2 = E-Field adapter 402-586

3 = coupling piece 402-597

Fig. 3.4.4-1

3.4.5 Adjustable spark gap

The adjustable spark gap 402–598 enables tests with direct current pulse injection. It is placed between the discharge network and the test object and switches the discharge pulse at the set voltage onto the test object. The test finger remains in firm contact with the test object the whole time.

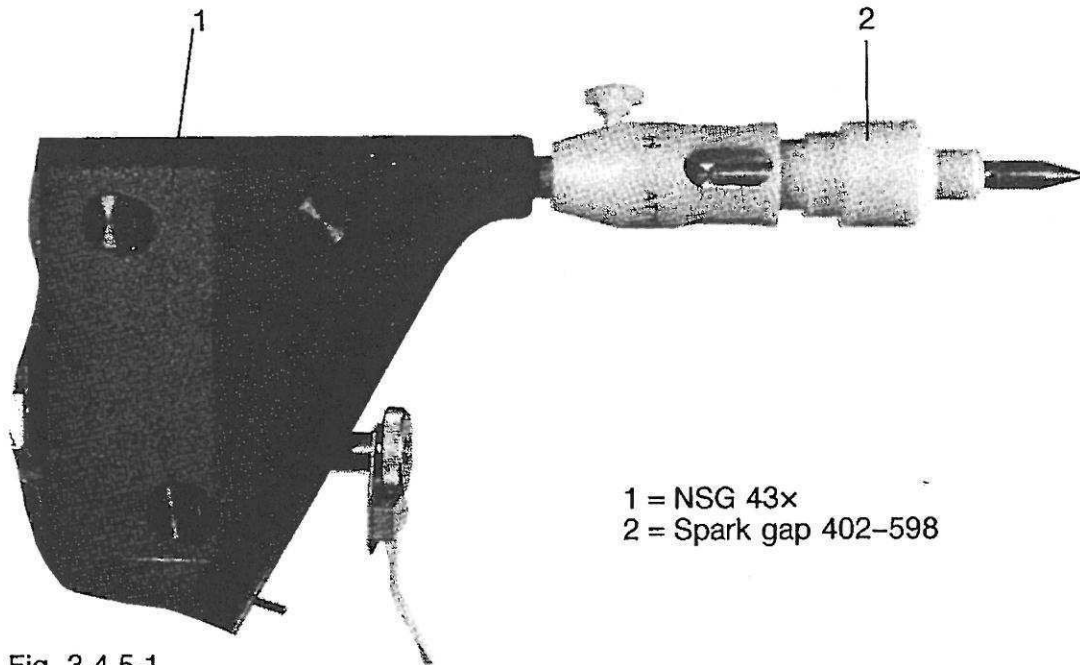


Fig. 3.4.5-1

Assembly and operation of the adjustable spark gap:

- Set NSG 432 to zero volt and *discharge* it.
- Set spark gap to zero mm.
- Push spark gap onto test finger till the discharge electrode makes contact with the opposite one. Using the plastic screw the Spark gap can be firmly screwed in this position.
- Now the distance of the spark gap can be set according to test requirements (depending on environmental conditions 0.3 to 1.5 kV/mm).
- Make contact with the test object (do not forget the ground connection).
- Switch on the generator and slowly increase the voltage. By reading the voltage on the DVM when sparking occurs, the voltage set on the spark gap can be determined.

(If the voltage is higher than that necessary for the distance set for the spark gap, then the repetition frequency of the discharge will increase. The discharge voltage is in any case dependent on the distance).

3.4.6 Measuring accessory

The measuring accessory 402-283 is used (in the first instance) for the verification of the discharge pulse shape of the NSG 430, NSG 431 and NSG 432 simulators.

The development of the measuring accessory is based on IEC publication 801-2.

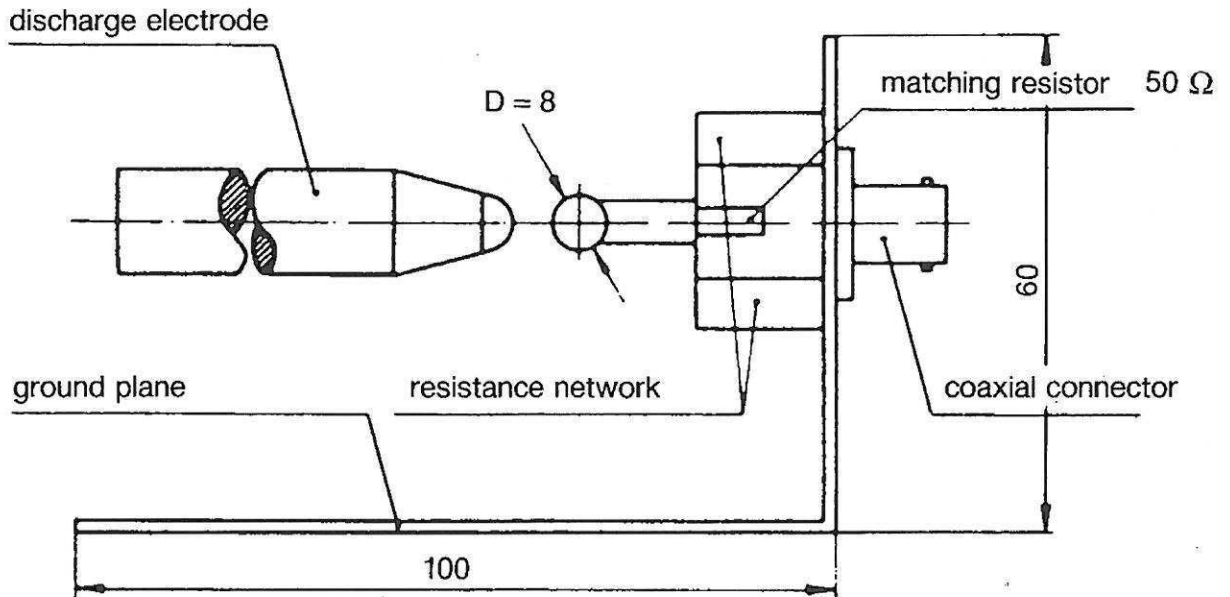
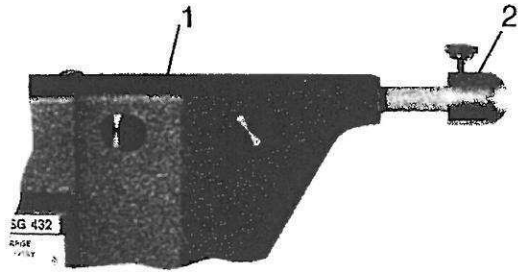


Fig. 3.4.6-1

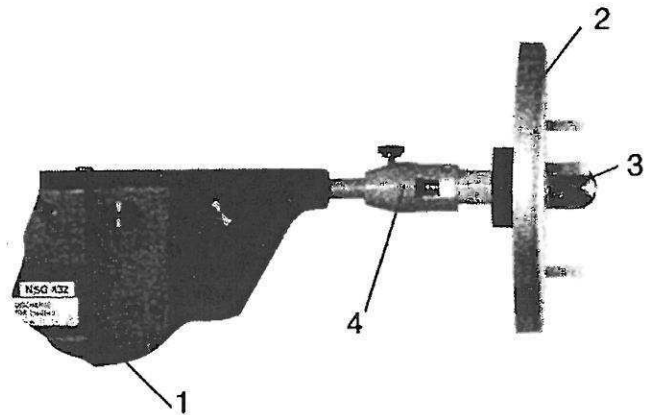
3.4.7 Push fit discharge ball

Usual assembly



- 1 = NSG 43x
- 2 = Discharge ball 25 mm
402-593

increased stray capacity
with E-Field adapter



- 1 = NSG 43x
- 2 = E-Field adapter 402-586
- 3 = discharge ball 25 mm
402-603
- 4 = coupling piece 402-597

Fig. 3.4.7-1

Basically with voltages > 4 kV the reproducibility is better with a larger discharge ball as well as shorter current rise times. It is a more severe test for the test object.

Increasing the stray capacity with the E Field adapter results in a higher di/dt at commencement of the pulse.

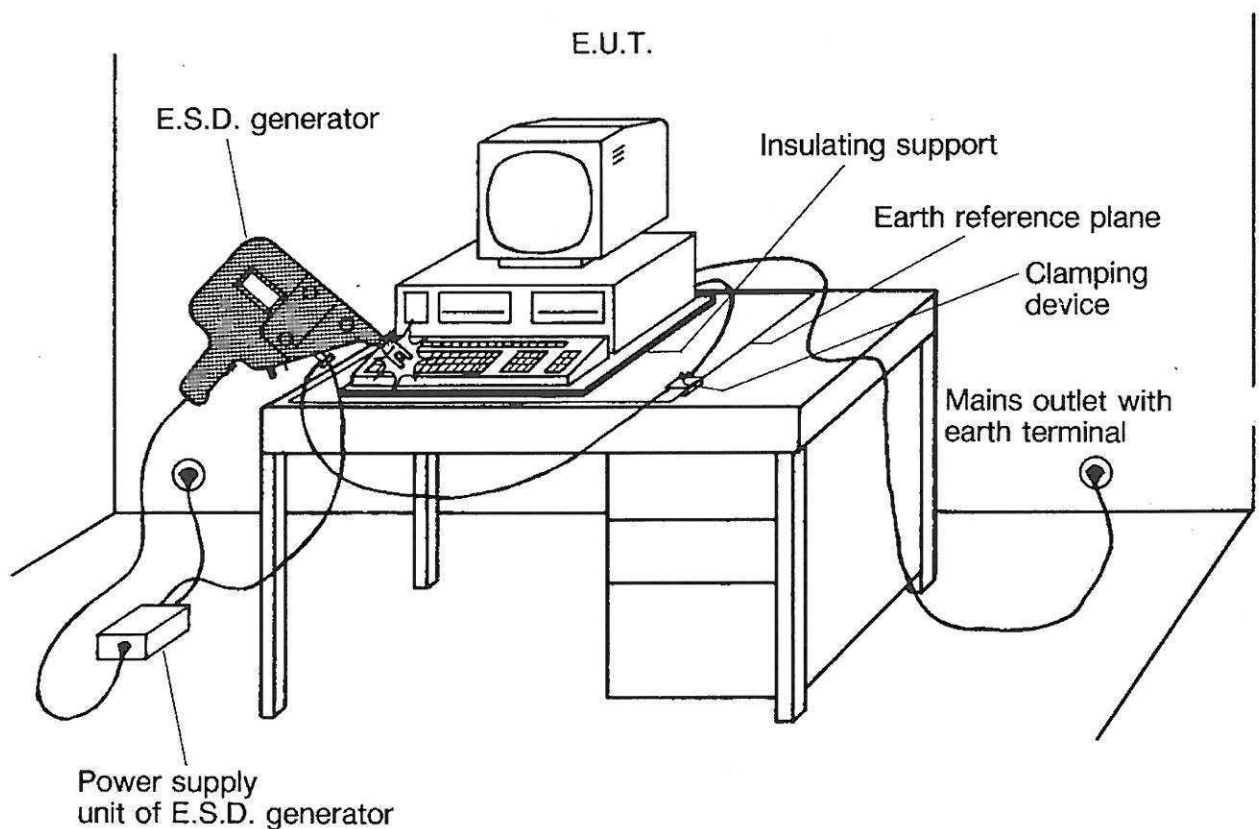
Some test regulations use this ball diameter instead of the 8 mm IEC test point.

4 Test Set-up

The test set-up consists of the test generator, the test object (EUT) and ancillaries which are required to make the following tests:

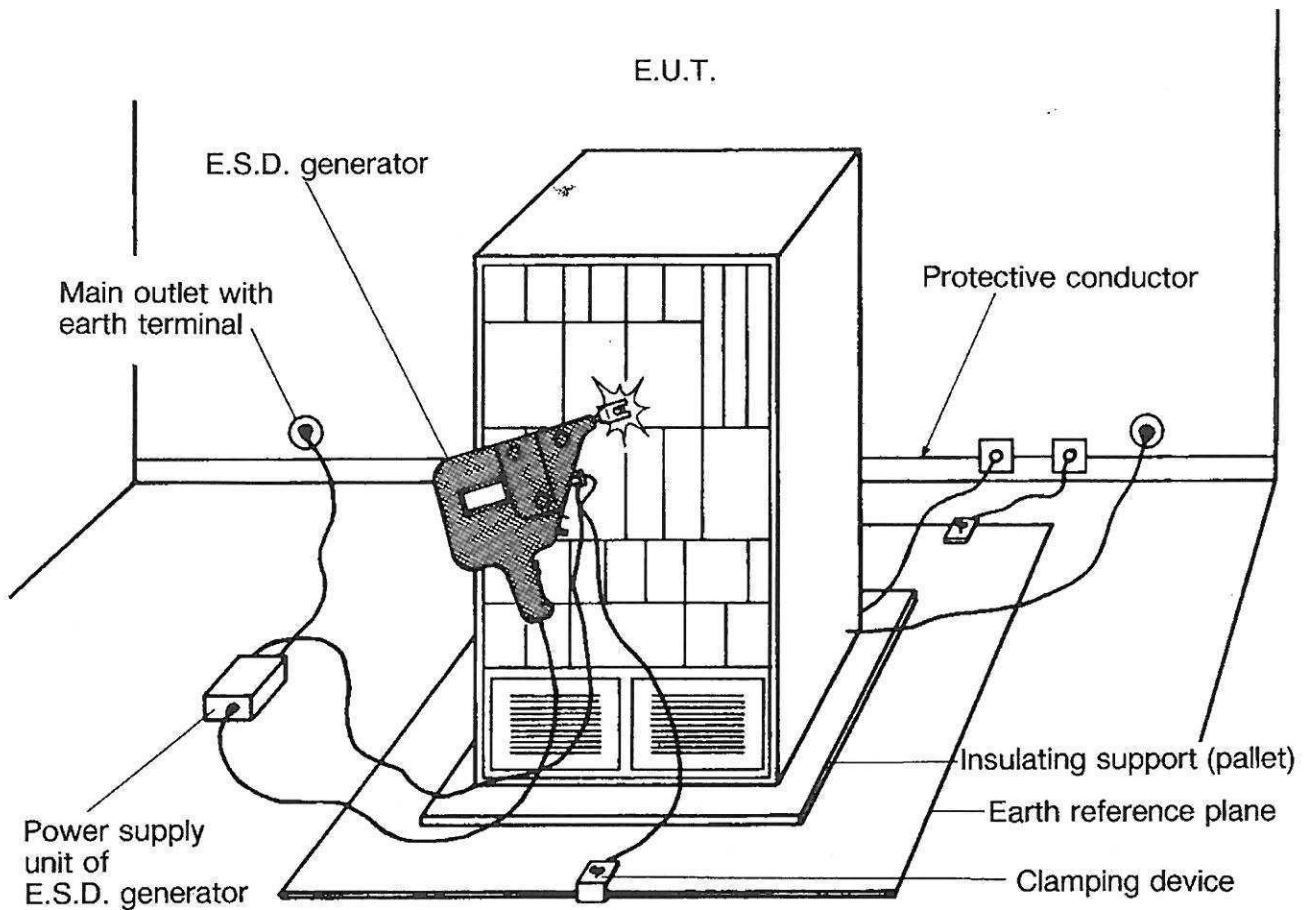
- direct discharge on the test object
- Simulation of discharges between objects, which are arranged or installed near to the test object.

These test set-ups are fully described in IEC 801-2. From these, two typical set-ups are shown here.



Test set-up for bench-top-mounted equipment, laboratory tests.

Fig. 4-1



Test set-up for cubicles, laboratory tests.

Bild 4-2

5 Conducting the Test

A full description of how the test is to be conducted is contained in IEC 801-2 chapter 8.

Note:

To avoid partial glow discharge or pre-ionization, the approach speed should be high.

6 Standards

- Proposal EEC 4517/79 COM (78) 766 final
- Dept. of Prices and Consumer Protection (GB)
- IEC Working paper TC65, WG6
- VG 95373 part 24
- PTT various countries
- IEC 801-2
- BS 6491 Part 1 1984
- PTT FRG (12 R 21)
- PTT F (69020)
- BS 6667: Part 2: 1985
- DIN IEC 801-2
- SS 436 15 22
- ECMA / TC 20 / 87 / 11 Draft

Listing of Standards for information only.

7 Technical Data

7.1 Summaries and definitions

Energy storage capacitor: The capacitor in the ESD generator, which simulates the capacitance of the human body, which is charged to the test voltage.

ESD: refers to discharge of electrostatic electricity.

Earth-Reference plane: A metal plate which serves as general reference point for the units to be tested, the ESD generator and the ancillary units which are used.

Holding time: The time interval in which the drop in output voltage due to loss before the discharge is not greater than 10%.

Discharge of static electricity: The displacement of an electrostatic charge between bodies with different electrostatic potentials.

Test generator (ESD) NSG 432: The test generator consists of the major parts:

- Charging resistor R_{CH}
- Energy storage capacitor C_C
- Discharge resistor R_d
- Power supply

7.2 Features and operating characteristics

Energy storage capacitor	C_s	: 150 pF* $\pm 10\%$
Discharge resistance	R_d	: 150 Ω * $\pm 10\%$
Charging resistor	R_{CH}	: 100 M Ω $\pm 10\%$
Output voltage (see note 1)	V_o	: 2 kV to 25 kV $\pm 10\%$
Polarity of output voltage		: positive / negative
Holding time for single charge (90% U_o)		: > 5s
Discharge, operating mode (see note 2)		: single discharge / rep. discharge approx. 10 Hz
Rise time of the discharge current	t_r	: 5 ns $\pm 30\%$ at 4 kV
Duration of the discharge current at 50% amplitude	t_w	: 30 ns $\pm 30\%$ at 4 kV
Peak value of discharge current ($\pm 30\%$)		: 9 A at 2 kV 18 A at 4 kV 37 A at 8 kV 70 A at 15 kV

Supply voltage ($\pm 10\%$)	:	100/120/220/240 VAC 50–60 Hz
Power consumption without preselect counter	:	approx. 25 VA
with preselect counter	:	approx. 30 VA
Temperature range in operation	:	5–40°C
Humidity in operation	:	20%–80% without condensation
Susceptibility limit	:	N as per VDE 0875 (without discharge arc)
Max. discharge energy	:	350 mJ
Test finger to IEC	:	Finger \varnothing 8 mm
Weight: NSG 432	:	approx. 1.3 kg (2.9 lbs)
power supply without preselect counter	:	approx. 1.2 kg (2.6 lbs)
power supply with preselect counter	:	approx. 2.1 kg (4.6 lbs)
Case compl. without options	:	approx. 7.0 kg (15.4 lbs)
Case compl. with options	:	approx. 8.3 kg (18.3 lbs)

* other values on request.

Note 1: open circuit voltage measured at the test finger.

Note 2: The generator is capable for investigation purposes, depending on voltage, to produce 20 discharges per second.

8 Accessories/Options

8.1 Accessories

Case		402-643
Pistol without discharge network		402-595
HV Cascade	positive (150 pF 150 Ω 25 kV)	402-568
HV Cascade	negative (150 pF 150 Ω 25 kV)	402-580
Power supply	without preselect counter	402-170
Distance ring		402-229
Discharge ball	25 mm push on	402-593
Ground cable	2 m	402-173
Fuse set		402-193
Manual	German	601-037
Manual	French	601-039
Manual	English	601-040
Suspension bracket		200-739
Mains cable	D/F/B/S/NL/I/N/SF	402-187
Mains cable	CH	402-188
Mains cable	GB	402-269
Mains cable	USA	402-189

8.2 Options

Power supply with preselect counter	402-579
H-Field adapter	402-587
E-Field adapter	402-586
Mountable spark gap adjustable	402-598
Measuring accessory to IEC 801-2	402-283
Discharge ball 25 mm for E-Field adapter	402-603
Coupling piece for E-Field adapter	402-597

Further HV cascades with other discharge networks can be delivered on request.

9 Service Information

9.1 Safety precautions

ATTENTION

This equipment and all accessories described herein operate on high voltage potential. Any mishandling or ignoring regulations can endanger life.

Only trained personnel must work with these units.

Only qualified service personnel may exchange components and make internal adjustments.

When working on the unit disconnect it from the mains and discharge it; when this is not possible for making measurements, then set high voltage to lowest value.

The mains and high voltage have not been additionally covered inside the unit.

9.2 Maintenance

The case may be wiped off with a damp soapy cloth.

9.3 Guarantee

For claims against warranty contact your local SCHAFFNER representative.

The following conditions must be fulfilled to claim against warranty:

- No independent maintenance work on the equipment.
- Use only original SCHAFFNER replacement parts.
- Return mailing *only in original* packing
- Faulty components subject to normal degradation and faults due to mishandling do not give rise to a claim against warranty.

9.4 Fuses

This test generator has a fuse only in the power supply.

This fuse is situated in the voltage selector ⑰. After unplugging the mains cable it can be removed by means of a screwdriver from the plug side.

Fuse type: 5 x 20 mm to IEC 127/III (DIN 41662)

220/240 V 125 mA slow blow

100/110 V 250 mA slow blow

The fuse current values are valid for the power supply with or without preselect counter.

9.5 Calibration

The digital voltmeter on the test generator NSG 432 was calibrated with regard to the output voltage on the test finger.

To calibrate the following measuring instrument is required:

HV voltmeter $R_i > 20 \text{ G}\Omega$

Calibration instructions:

To calibrate the instrument the steps shown should be carried out in the following order:

1. Connect HV voltmeter between test finger and ground socket.
2. Turn potentiometer ⑥ to maximum position.
3. Set the output high voltage to 25.5 kV with the potentiometer P2 on the ELECTRONIC PCB.
4. Calibrate digital voltmeter ① to 25.5 kV with potentiometer P4 on the electronic board.

9.6 Changing the automatic repetition on the preselect counter

Another repetition frequency can be set for the automatic single pulse release for power supply with preselect counter as follows in the range 1 Hz–0.05 Hz.

Set R_3 and C_4 to give:

$$f = 1 / (R_c * C_4) \quad (\text{Hz})$$

9.7 Parts Lists

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
1	1,000	Stk	SL4	402-582	B	21		GEHAUSEBODEN STROMVERS. NSG 432 PULVERBESCHICHTET	5	
2	1,000	Stk	SL4	402-581	A	21		GEHAUSEDECKEL STROMVERS. NSG 432 PULVERBESCHICHTET	15	
3	1,000	Stk	SL4	402-191	A	51		NETZTRAFO ZU STROMVERS. NSG 430/431	5	
4	1,000	Stk	SL4	402-193	A	21		SICHERUNGSSATZ STROMVERS. ZU NSG 430/431	5	
5	1,000	Stk	SL4	402-575	A	21		PRINT-STROMVERSORGUNG ZU NSG 432 (BESTÜCKT)	5	
6	1,000	Stk		150-840	A	51		GRATEDIOSE 3 POL	S 5	
7	1,000	Stk		163-905	A	51		VORWAHLZÄHLER 220V 6-STELLEN/ AUSSCHN. 50X50	5	
8	1,000	Stk	SL4	1091-003	A	20		STECKER KOMPL. ERDANSCHLO1 10/6A 250V	5	
9	1,000	Stk		155-600	A	51		POLKLEMME 4MM GB/GN	5	
10	1,000	Stk		156-151	A	51		KOAXIAL BUCHSE 1 POL BNC	5	
11	1,000	Stk		154-002	A	51		STECKZUNGE 6,3 X 0,8	5	
12	1,000	Stk		140-201	A	51		KIPPSCHALTER 6 A 50 V	5	S2
13	1,000	Stk	EZ4	271-011	A	50		WIPPSCHALTER 2-FOLIG	5	S1
14	4,000	Stk		106-131	A	51		SR.PAN-HEAD M 4 X 8 DIN 85A VERZ.PASS	5	
15	2,000	Stk		106-078	A	51		SR.PAN-HEAD M 3 X 5 DIN 85A VERZ.PASS	5	
16	4,000	Stk		106-079	A	51		SR.PAN-HEAD M 3 X 6 DIN 85A VERZ.PASS	5	
17	6,000	Stk		109-628	A	51		SCHNORR SCHEI. M 3 S	5	
18	2,000	Stk		108-305	A	51		SR.SE-BLECH D2,9X 6,5 DIN7982 FORM C VERZ.PASS	5	
19	0,120	M		103-602	A	51		LITZE TQ0,22 RT	5	
20	0,100	M		103-600	A	51		LITZE TQ0,22 SZ	5	
21	0,570	M		103-603	A	51		LITZE TQ0,22 OG	5	
22	0,560	M		103-656	A	51		LITZE TQ0,5 H*BL	5	
23	0,610	M		103-651	A	51		LITZE TQ0,5 BN	5	
24	0,620	M		103-660	A	51		LITZE TQ0,5 GN/GB	5	
25	3,000	Stk		154-565	A	51		KABELSCHUH RING M4 RT	5	
26	0,150	M		104-737	A	51		SCHRUMPFSCHL. 3/16"	5	
27	4,000	Stk		154-510	A	51		KABELSCHUH 4,8 RT	5	
28	4,000	Stk		101-601	A	51		ELASTIKPUFFER 5 MM	5	
29	2,000	Stk		109-642	A	51		FÄCHER SCHEIBE M 4 CS451	5	
30	0,090	M		100-022	A	51		SCHAUMKL.BAND 4683	5	
31	1,000	Stk		200-787	A	51		DECKPLATTE ZU NSG 432 BESCHRIF. STROMVERSORGUNG	5	
32	2,000	Stk		124-051	A	51		KOND.KER 63 V 10 NF (63 V 55GRAD 40 V 85GRAD)	5	
33	4,000	Stk		108-255	A	51		SR.LI-BLECH D2,9X 6,5 DIN7981 VERZ.PASS	15	
34	10,000	Stk		159-503	A	51		KABELBINDER 2,5 MM	5	
35	1,000	Stk	SL4	350-021	A	51		BEZEICHN.SCHILD	10	
36	1,000	Stk		350-064	A	51		BEZEICHN.SCHILD	10	
Änderungen	1	31645A0487R.W	3			5		Techn. Klassifiz.: 67.80.00.00		
	2	33077B1287BS	4			6		Bezeichn. 1 SL OPTION 3 FOR NSG 432		
Erstellt: 18.09.86ES		Erfasst: 18.09.86ES		Mikro Film		Bezeichn. 2 POWER SUPPLY WITH COUNTER				
SCHAFFNER		SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH		Seite 1 ./.		SL4 402-579		B	17	

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
37	1,000	Stk		109-209	A	51		MU. RANDEL AT 511	5	
38	1,000	Stk		350-063	A	51		BEZEICHN. SCHILD 430/431	10	
39	1,000	Stk		131-201	A	51		FAST REC. DIO. 100V 0,15A	5	
40	1,000	Stk	SL4	200-B37	A	21		ANSCHLAGWINKEL ZU STROMV. NSG432	5	
900	1,000	Stk	SZ3	600-112	A	99		SZ ZU STROMVERSORGUNG NSG 432		
901	1,000	Stk	EZ3	9200-787	A	99		EZ ZU DECKPL. BESCHRIFTET ZU NSG432 STROMVERSORGUNG		
902	1,000	Stk	IO4	350-146	A	99		IO ZU DECKPL. BESCHRIFTET ZU STROMVERS. - KLISCHEE		
903	1,000	Stk	ZZ2	500-669	B	99		ZZ ZU SL OPTION 3 NSG 432 POWER SUPPLY WITH COUNTER		
Anderungen	131645A0487R.W		3			5		Techn. Klassifiz.:	67.80.00.00	
	233077B1287BS		4			6		Bezeichn. 1	SL OPTION 3 FOR NSG 432	
Erstellt: 18.09.86BS		Erfasst: 18.09.86BS					Mikro Film	Bezeichn. 2	POWER SUPPLY WITH COUNTER	
SCHAFFNER		SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH		Seite 2 ENDE		SL4	402-579	B	17	

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
1	1,000	Stk	SL4	300-082	A	51		LEITERPLATTE 432	5	
4	1,000	Stk		115-054	A	51		WID.MEF- 0,60 W 150 R	5	R1
5	1,000	Stk		115-056	A	51		WID.MEF- 0,60 W 180 R	5	R2
6	1,000	Stk		115-079	A	51		WID.MEF- 0,60 W 1,5 K	5	R3
7	1,000	Stk		115-060	A	51		WID.MEF- 0,60 W 270 R	5	R4
8	1,000	Stk		112-049	A	51		WID.DRA- 4 W 1 K	5	R5
9	1,000	Stk		114-702	A	51		WID.PTC- 70 R	5	R6
10	4,000	Stk		115-074	A	51		WID.MEF- 0,60 W 1 K	5	R7-9,11,
11	3,000	Stk		115-099	A	51		WID.MEF- 0,60 W 10 K	5	R10,12,17
12	1,000	Stk		115-070	A	51		WID.MEF- 0,60 W 680 R	5	R14
13	1,000	Stk		115-058	A	51		WID.MEF- 0,60 W 220 R	5	R15
14	2,000	Stk		115-093	A	51		WID.MEF- 0,60 W 5,6 K	5	R22,23
15	1,000	Stk		115-149	A	51		WID.MEF- 0,60 W 1000 K	5	R18
16	5,000	Stk		115-124	A	51		WID.MEF- 0,60 W 100 K	5	R19,20,21 R28,29
17	1,000	Stk		211-001	A	50		WID.HV - 0,5 W 1 M VR37 5% 2500V	5	R16
18	1,000	Stk		115-049	A	51		WID.MEF- 0,60 W 100 R	5	R24
20	2,000	Stk		118-073	A	51		POTI TRIMM 0,75W 100 R 40°C/LINEAR/LIEGEND	5	P2,3
21	1,000	Stk		118-085	A	51		POTI TRIMM 0,75W 1 M 40°C/LINEAR/LIEGEND	5	P4
22	2,000	Stk		115-006	A	51		WID.MEF- 0,60 W 1,8 R	5	R25,26
23	2,000	Stk		125-087	A	51		KOND.PER 50 V 1 UF	5	C20,C23
24	2,000	Stk		125-569	A	51		KOND.ELE 40 V 100 UF	5	C1,8
25	4,000	Stk		120-754	A	51		KOND.MKT 63 V 100 NF	5	C2-4,13
26	1,000	Stk		120-560	A	51		KOND.MKT100 V 680 NF	5	C5
27	1,000	Stk		125-608	A	51		KOND.ELE 63 V 47 UF	5	C6
28	1,000	Stk		121-035	A	51		KOND.MKC400 V 68 NF	5	C7
29	2,000	Stk		125-065	A	51		KOND.PER 35 V 1 UF	5	C9,16
30	1,000	Stk		124-053	A	51		KOND.KER 63 V 22 NF	5	C10
31	1,000	Stk		125-068	A	51		KOND.PER 35 V 3,3 UF	5	C11
32	1,000	Stk		212-002	A	50		KOND.Y 250VAC 4,7 NF 13,5X 5,1X10,3/RM15,2 RI	5	C12
33	5,000	Stk		124-051	A	51		KOND.KER 63 V 10 NF (63 V 55GRAD 40 V 85GRAD)	5	C14,15,18 19,22
35	1,000	Stk		114-706	A	51		WID.PTC-400 MA 80 V	5	R27
36	1,000	Stk		130-001	A	51		STAND.-DIODE1000 V 1 A	5	D1
37	12,000	Stk		131-201	A	51		FAST REC.DIO. 100V 0,15A	5	D2-D7, D9-D14
40	2,000	Stk		132-001	A	51		TRANS N BC182A TO- 92 50V/ 0,2A/0,3W	5	T1,2
41	1,000	Stk		132-510	A	51		TRANS P BDW74C TO-220 100V/ 8 A/ 80W	5	T3
42	2,000	Stk		132-012	A	51		TRANS N TYP50 TO-220 400V/ 1 A/ 40W	5	T4,5
43	1,000	Stk		132-301	A	51		TRANS P BC212A TO- 92 50V/ 0,2A/0,3W	5	T6
46	1,000	Stk		138-210	A	51		IC 317 LIN*SPANNNGSREGL	5	IC1
47	1,000	Stk		138-215	A	51		1,2-37 V 1,5 A POS TO220 VOLT REG UA 7815	5	IC2
Anderungen	1	131644A0487R.W	3			5		Techn. Klassifiz.: 63.30.00.00		
	2		4			6		Bezeichn. 1 PC ELECTRONIC FOR NSG432		
Erstellt:10.09.86RW		Erfasst:10.09.86RW		Mikro Film			Bezeichn. 2			
SCHAFFNER		SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH		Seite 1 / /	SL4	402-574	A	21		

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
48	1,000	Stk		135-502	A	51		IC SAA1029 HLL*UNIVERS. STÖRSICH. LOGIKEONH, DIL16	5	IC3
49	1,000	Stk		138-208	A	51		IC 317 LIN*SPANNGSREGL 1,2-37 V 0,1 A TO 92	5	IC4
50	1,000	Stk		136-538	A	51		IC 4538 CMOS*2 MONOFLOP DIL16	5	IC5
51	1,000	Stk		136-052	A	51		IC 4052B CMOS*2MULTIFLEX. 4 KANAL, ANALOG DIL16	5	IC6
55	1,000	Stk		140-431	A	51		TASTER D. 6 MM 2 POLIG	5	S2
56	1,000	Stk		142-101	A	51		KNOFF 8 MM RT	5	
57	1,000	Stk		142-003	A	51		DREHKNOFF 10,0 MM SZ STRICH 1/8 ZOLL	5	
58	1,000	Stk		142-303	A	51		DECKEL 10 MM RT	5	
60	1,000	Stk	SL4	402-617	A	21		ÜBERTRAGER ZU NSG 432 DURCHSCHLAGSERKENNUNG	5	IT1
61	1,000	Stk	SL4	402-235	B	21		TRAFO NSG 43X HOCHSPANN.	5	TRAFO 1
62	1,000	Stk	SL4	402-177	A	21		DROSSEL 3,7 MH ZU NSG 43X	5	L 1
64	6,000	Stk		109-628	A	51		SCHNORR SCHEI. M 3 S	5	
65	3,000	Stk		109-004	A	51		MU.6-KT, SW 5,5 M 3 0,8D DIN934 VERZ.PASS	5	
66	6,000	Stk		106-081	A	51		SR.PAN-HEAD M 3 X 8 DIN 85A VERZ.PASS	5	
67	25,000	Stk		158-203	A	51		LÖTHÜLSE	5	
69	2,000	Stk	SL4	200-369	A	21		KÜHLKÖRPER ZU NSG 431	5	
72	1,000	Stk		147-905	A	51		WARNTONGEBER 6V/16MA	5	WTG 1
73	1,000	Stk		133-512	A	51		ISOLIERSCHEIBE 500V/ ISOLIERSPANNUNG	5	
74	3,000	Stk		133-503	A	51		ISOLIERBÜCHSE M3	5	
75	2,000	Stk		109-553	A	51		U-SCHEIBE M 3	5	
76	3,000	Stk		138-706	A	51		IC SOCKEL 16 POL.	5	
77	1,000	Stk		163-570	A	51		DIGIVOLTMETER LCD 3,5 DIG; +/-2V; 5V SPEIS	5	DVM
78	1,000	Stk		104-461	A	51		FLACHBANDKABEL 13POL KONF FÜR DVM(163-570)ANSCHLUSS	5	
79	2,000	Stk		435-001	A	50		U-SCHEIBE 8 X 3,2X1 DELLIT	5	
81	0,300	GR		19-016	A	50		DRAHT CU D0,80 VERZINNT	5	
91	1,000	Stk	SL4	200-357	A	51		HALTEBLECH 1 ZU NSG 431	5	
93	3,000	Stk		180-101	A	51		DISTANZBOLZEN M 3 X 5	5	
94	2,000	Stk		180-411	A	51		DISTANZRÖHRCHEN M 3 X 8	5	
95	1,000	Stk	SL4	200-750	B	21		ZWISCHENPLATTE ZU NSG 432	5	
96	3,000	Stk		109-110	A	51		MU.KALEISETZ M 3 H1 =0,9	5	
97	1,000	Stk		100-245	A	51		PLASTIKBEUTEL 10" X 14" ANTISTATISCH	10	
98	2,000	Stk		115-074	A	51		WID.MEF- 0,60 W 1 K	5	R13,30
99	1,000	Stk	DO4	350-155	A	51		BEZEICHNUNGSSCHILD ANTISTATIC	5	
101	1,000	Stk		142-103	A	51		KNOFF WS	5	

Änderungen	1	31644A0487R.W3	3		5		Techn. Klassifiz.:	63.30.00.00
	2		4		6		Bezeichn. 1	PC ELECTRONIC FOR NSG432
Erstellt: 10.09.86RW		Erfasst: 10.09.86RW		Mikro Film			Bezeichn. 2	

SCHAFFNER	SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH	Seite 2 ./.	SL4	402-574	A	21
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Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
900	1,000	Stk	SZ2	600-111	A	99		SZ ZU GESAMTSHEMA NSG432		
901	1,000	Stk	DD3	500-697	A	99		DD ZU PC-ELEKTRONIK PRINT		
902	1,000	Stk	ZZ3	500-698	A	99		ZZ ZU PRINT 300-082		
Änderungen	1	31644A0487R.W	3			5		Techn. Klassifiz.:	63.30.00.00	
	2		4			6		Bezeichn. 1	PC ELECTRONIC FOR NSG432	
Erstellt: 10.09.86RW		Erfasst: 10.09.86RW		Mikro Film	Bezeichn. 2					
SCHAFFNER		SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH			Seite 3 ENDE	SL4	402-574	A	21	

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
1	1,000	Stk		200-742	A	51		GEHÄUSE ZU HV-KASKADE NSG 432 MAKROLON SW	20	
2	1,000	Stk	SL4	300-080	A	51		LF-UNBESTÜCKT HV-PRINT ZU NSG 432	5	
3	10,000	Stk		124-827	A	51		KOND.KER 6 KV 1 NF	5	C2,4,7-10 C12,C13, C15,16
4	3,000	Stk		124-825	A	51		KOND.KER 6 KV 680 PF	5	C1,3,6
5	1,000	Stk		124-803	A	51		KOND.KER 6 KV 10 PF	5	C5
6	3,000	Stk		112-817	A	51		WID.HV - 1 W 33 M	5	R1-3
7	2,000	Stk		112-787	A	51		VR68 5% 7000V WID.HV - 1 W 100 K	5	R5,6
8	1,000	Stk		110-697	A	51		WID.KOM- 0,5 W 200 R	5	R7
9	8,000	Stk		130-252	A	51		HV DIODE 12KV 20MA	5	D3-10
10	1,000	Stk		109-110	A	51		MU.KALEISETZ M 3	5	
11	1,000	Stk		106-084	A	51		H1 =0,9 SR.PAN-HEAD M 3 X14 DIN 85A VERZ.PASS	20	
12	1,000	Stk	SL4	200-745	A	51		ERDUNGSSTIFT ZU NSG 432	20	
13	1,000	Stk	SL4	402-616	A	51		PRÜFFINGER GESPRITZT ZU NSG 432 MIT NACHARBEIT	20	
14	5,000	Stk		158-500	A	51		KONTAKTSTIFT GEFEDERT	20	
15	1,000	Stk		110-611	A	51		WID.KOM- 1 W 150 R	20	R4
16	0,010	M		13-001	A	50		DRAHT AWG24 GB	20	
17	0,250	KG		29-026	A	50		WZT2401 VERGUSSTMASSE EP SCOTCHCAST NR.8	30	
18	1,000	Stk		200-738	A	51		GEHÄUSEHALFTE RECHTS ZU NSG 432 VORDERT.ABS SW	35	
19	1,000	Stk		200-768	A	51		SPEZ SCHRAUBE M5 X40 KURZ ZU NSG 432	35	
20	2,000	Stk		200-767	A	51		SPEZ.SCHRAUBE M5 X45 LANG ZU NSG 432	35	
21	3,000	Stk		107-920	A	51		SR.RÄNDEL M 5	35	
22	1,000	Stk		107-863	A	51		SR.GEW.-STIFT M 3 X 5 DIN915 1-6-KT-ZAPFEN	20	
23	1,000	Stk		350-145	A	51		BEZEICHN.SCHILD NSG 432 BEDRUCKT Z.PLUG-TN NSG432	40	
24	1,000	Stk	SL4	200-461	A	51		BEF-SCHRAUBE NSG 431	35	
25	1,000	Stk		109-633	A	51		SCHNDRR SCHEI. M 8 S	35	
26	3,000	GR		19-016	A	50		DRAHT CU D0,80 VERZINNT	5	IR-BRÜCKE
27	1,000	CM		21-027	A	50		ISOLIERB.163 15,0	20	
28	0,350	M		104-854	A	51		TEFLONSCHL. 2,7/3,3 TRANSP.	20	
900	1,000	Stk	SZ2	600-111	A	99		SZ ZU GESAMTSHEMA NSG432		
901	1,000	Stk	EZ2	9200-742	A	99		EZ ZU GEHÄUSE HV-KASKADE NSG 432		
Änderungen	1		3			5		Techn. Klassifiz.:	69.40.00.00	
	2		4			6		Bezeichn. 1	SL HV-MOD.NSG432+150PF150	
Erstellt:18.09.86BS		Erfasst:18.09.86BS		Mikro Film		Bezeichn. 2		POS.150PF,150DHM 25KV 8MM		
SCHAFFNER		SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH		Seite 1 + / .		SL4		402-568		A 21

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen	
902	1,000	Stk	ZZ2	9200-747	A	99		HV-KASKADE KOMPL.NSG 432			
903	1,000	Stk	EZ4	9200-768	A	99		EZ ZU SPEZ.SCHRAUBE KURZ			
904	1,000	Stk	EZ4	9200-767	A	99		EZ ZU SPEZ.SCHRAUBE LANG			
905	1,000	Stk	ZZ2	500-670	A	99		ZZ ZU HV-KASKADE NSG 432			
906	1,000	Stk	ZZ3	500-671	A	99		ZZ ZU HV-PRINT NSG432 POS BESTÜCKUNGSZEICHNUNG			
Änderungen	1		3			5		Techn. Klassifiz.:	69.40.00.00		
	2		4			6		Bezeichn. 1	SL HV-MOD.NSG432+150PF150		
Erstellt:18.09.86BS		Erfasst:18.09.86BS		Mikro Film		Bezeichn. 2		POS.150PF,150OHM 25KV 8MM			
SCHAFFNER			SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH			Seite 2 ENDE		SL4	402-568	A	21

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen
2	1,000	Stk	SL4	402-191	A	51		NETZTRAFO ZU STROMVERS, NSG 430/431	10	
3	1,000	Stk	SL4	402-193	A	21		SICHERUNGSSATZ STROMVERS. ZU NSG 430/431	10	
4	1,000	Stk	SL4	402-556	A	21		GEHAUSEDECKEL NSG 430/431	10	
5	1,000	Stk	SL4	402-557	A	21		GESPRITZT	10	
7	1,000	Stk		150-840	A	51		GEHAUSEBODEN NSG 430/431	10	
8	1,000	Stk	SL4	1091-003	A	20		GESPRITZT	10	
9	1,000	Stk		109-642	A	51		GRATEDOSE 3 POL	10	S
10	4,000	Stk		101-601	A	51		STECKER KOMPL.ERDANSCHLO1	10	
11	0,270	M		103-710	A	51		10/6A 250V	10	
12	1,000	Stk	SL4	350-021	A	51		FÄCHER SCHEIBE M 4	10	CS431
13	1,000	Stk		350-063	A	51		ELASTIKPUFFER	10	5 MM
14	1,000	Stk		350-064	A	51		LITZE TQ0,75	10	GB/GN
15	1,000	Stk		155-600	A	51		BEZEICHN.SCHILD	10	
16	4,000	Stk		106-081	A	51		BEZEICHN.SCHILD	10	430/431
17	2,000	Stk		106-079	A	51		BEZEICHN.SCHILD	10	
18	4,000	Stk		108-255	A	51		POLKLEMME	10	4MM GB/GN
19	2,000	Stk		108-305	A	51		SR.PAN-HEAD	10	M 3 X 8
20	2,000	Stk		109-004	A	51		DIN 85A	10	VERZ.PASS
21	6,000	Stk		109-628	A	51		SR.PAN-HEAD	10	M 3 X 6
24	0,270	M		103-710	A	51		DIN 85A	10	VERZ.PASS
25	0,457	GR		19-016	A	50		SR.LI-BLECH	10	D2,9X 6,5
26	1,000	Stk		154-520	A	51		DIN7981	10	VERZ.PASS
30	1,000	Stk		300-031	A	51		SR.SE-BLECH	10	D2,9X 6,5
32	1,000	Stk		125-565	A	51		DIN7982 FORM C	10	VERZ.PASS
33	1,000	Stk		125-633	A	51		MU.6-KT,SW 5,5 M 3	10	0,8D
34	1,000	Stk		212-007	A	50		DIN934	10	VERZ.PASS
35	1,000	Stk		114-704	A	51		SCHNORR SCHEI. M 3	10	S
37	1,000	Stk		115-085	A	51		LITZE TQ0,75	10	GB/GN
38	1,000	Stk		130-755	A	51		DRAHT CU	10	D0,80
39	1,000	Stk		132-205	A	51		VERZINNT	10	
40	1,000	Stk		131-501	A	51		KABELSCHUH	5	6,3 RT
42	3,000	Stk		158-203	A	51		LEITERPLATTE	5	430
44	1,000	Stk	SL4	200-321	A	21		431	5	PRINT KOM
45	1,000	Stk		159-503	A	51		KOND.ELE 40	5	V 10 UF
46	1,000	Stk		106-082	A	51		KOND.ELE100	5	V 470 UF
								KOND.X2 250VAC	5	0,15 UF
								24,0X 9,0X15,0/RM20,3	5	RI
								WID.PTC-	5	6 MA 3,5 K
								WID.MEF-	5	0,60 W 2,7 K
								ZENERDIODE	5	36V 1,3W
								TRANS ND BDW73C	5	TD-220
								100V/ 8 A/ 80W	5	
								GLEICHRICHTER 250V	5	1,5A
								LÖTHÜLSE	5	
								WINKEL ZU NSG 431	5	
								KABELBINDER	5	2,5 MM
								SR.PAN-HEAD	5	M 3 X10
								DIN 85A	5	VERZ.PASS

Änderungen	1	I264 A0481 -	3	I471 A0183 -	5		Techn. Klassifiz.:	67,80,00,00
	2	I302 A0981 -	4	I523 A0883 -	6		Bezeichn. 1	SL POWER SUPPLY FOR
Erstellt: 03.02.81 IG		Erfasst: 13.02.86 REB		Mikro Film	Bezeichn. 2 NSG 43X			

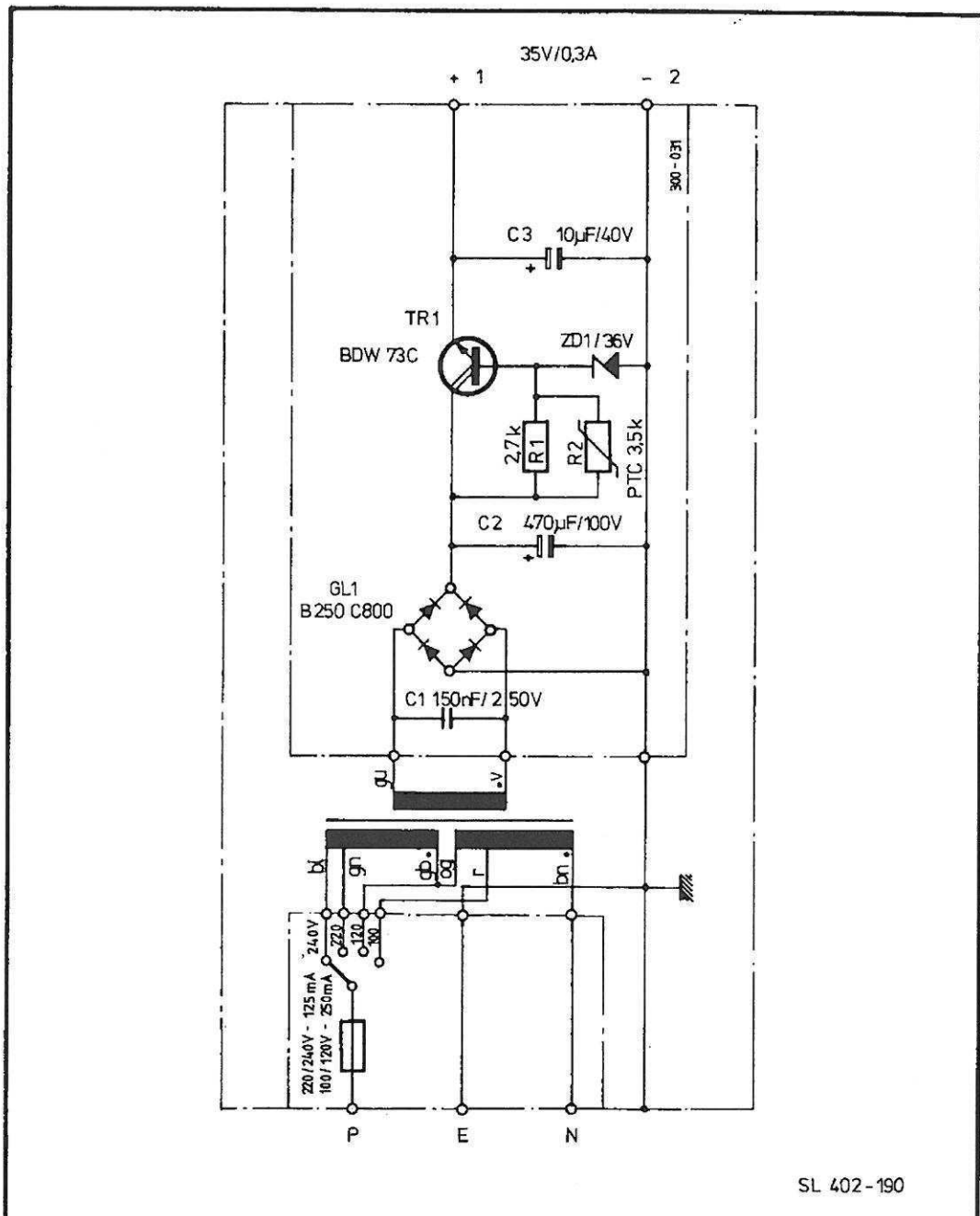
SCHAFFNER	SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH	Seite 1 ./.	SL4	402-170	D	21
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Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen	
47	1,000	Stk		109-004	A	51		MU.6-KT, SW 5,5 M 3 0,8D DIN934 VERZ.PASS	5		
48	1,000	Stk		109-628	A	51		SCHNDRR SCHEI. M 3 S	5		
49	1,000	Stk		133-511	A	51		ISOLIERECH.SELBSTKLEBEND 08 C/W / 6KV ISOLIERSP.	5		
50	1,000	Stk		133-503	A	51		ISOLIERBÜCHSE M3	5		
900	1,000	Stk	ZZ3	500-211	A	99		ZZ ZU STROMVERSORGUNG			
901	1,000	Stk	PV4	500-226	A	99		PV ZU NETZTRAUD- STROMVERSORGUNG			
902	1,000	Stk	EZ4	9350-021	A	99		EZ ZU BEZ.-SCHILD 350-021			
903	1,000	Stk	DO4	9350-063	A	99		DO ZU BEZ.-SCHILD 350-063			
904	1,000	Stk	DO4	9350-064	A	99		DO ZU BEZ.-SCHILD 350-064			
905	1,000	Stk	SZ4	600-033	A	99		SZ ZU STROMVERSORGUNG			
906	1,000	Stk	EZ4	9300-031	A	99		EZ ZU LEITERPL. STROMVERS 300-031 BOHRPLAN			
Anderungen	1	I264 A0481 -	3	I471 A0183 -	5			Techn. Klassifiz.: 67.80.00.00			
	2	I302 A0981 -	4	I523 A0883 -	6			Bezeichn. 1 SL POWER SUPPLY FOR			
Erstellt: 03.02.81 IG		Erfasst: 13.02.86 REB		Mikro Film				Bezeichn. 2 NSG 43X			
SCHAFFNER			SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH			Seite 2 ENDE		SL4	402-170	D	21

Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen	
1	1,000	Stk	SL4	402-595	A	31		GEHAUSEHALFTE LINKS KOMPL ZU NSG 432	5		
2	1,000	Stk	SL4	402-568	A	21		SL HV-MOD.NSG432+150PF150 POS,150PF,150OHM 25KV 8MM	5		
4	1,000	Stk	SL4	402-229	A	21		DISTANZIERVORRICHTUNG ZU NSG 430/431	10		
5	1,000	Stk	SL4	402-643	A	21		TRAGKOFFER KOMPL. ZU NSG 432	10		
6	1,000	Stk		100-241	A	51		FALTBOX ZU NSG 432	10		
7	1,000	Stk		601-037	A	51		MANUAL D NSG 432	10		
8	1,000	Stk		350-140	A	51		BEZEICHN.SCHILD NSG 432 BEDRUCKT	5		
9	1,000	Stk	SL4	200-739	A	51		BÜGEL ZU NSG 432	5		
10	1,000	Stk	SL4	402-593	A	21		SL DISCH.SPHERE 1" NSG43X STECKKUGEL AUF IEC-FINGER	10		
12	1,000	Stk		402-173	A	21		ERDUNGSKABEL NSG 43X	10		
Änderungen	1		3			5		Techn. Klassifiz.: 67,40,00,00			
	2		4			6		Bezeichn. 1 NSG 432 POSITIV			
Erstellt: 21.11.86R.W		Erfasst: 21.11.86R.W		Mikro Film		Bezeichn. 2 25KV WITHOUT PRE.COUNTER					
SCHAFFNER			SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH			Seite 1 ENDE		SL4	400-120	A	17

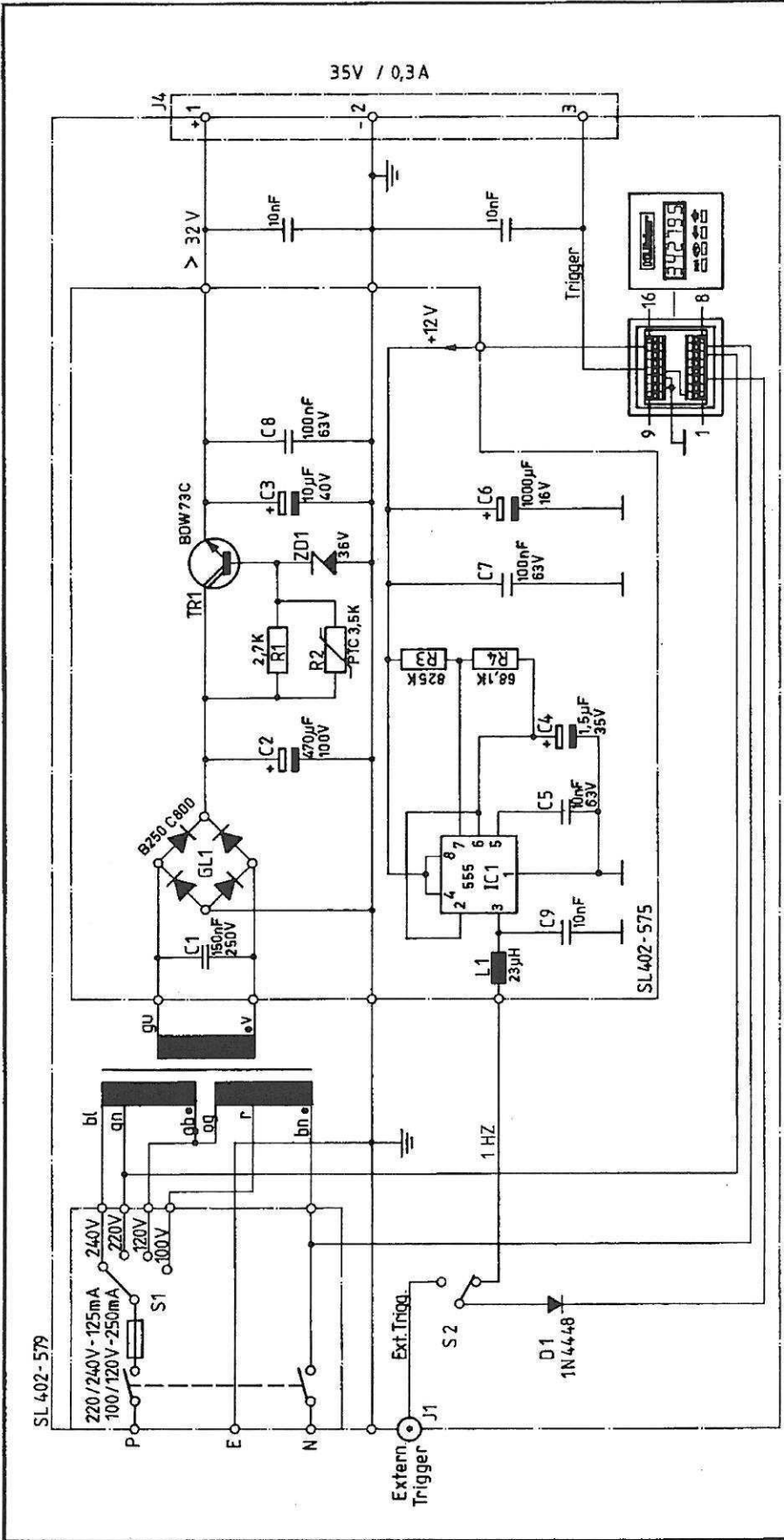
Pos.	Menge	Einh.	Dok- Art	Artikel-Nr.	Ind.	LF- Nr.	VA VS	Bezeichnung 1 Bezeichnung 2	AF Nr.	Bemerkungen	
1	1,000	Stk	SL4	200-758	A	21		GEHAUSEHALFTE LINKS PARTIELL METALLISIERT	5		
2	1,000	Stk	SL4	200-737	A	51		GEHAUSEHALFTE RECHTS ZU NSG 432	15		
3	1,000	Stk	SL4	402-574	A	21		PC ELECTRONIC FOR NSG432	5		
4	1,000	Stk		107-762	A	51		SR.FL.K-SCHNEID D2,9X19 DIN7971 (KOPF) VERZ.PASS	5		
5	3,000	M		103-759	A	51		LITZE TQ1,0 WS	5		
6	2,000	Stk		107-768	A	51		SR.FL.K-SCHNEID D2,9X 6,5 DIN7971 (KOPF) VERZ.PASS	5		
7	1,000	Stk		300-081	A	51		KONTAKTPRINT ZU NSG 432	5		
8	7,000	Stk		158-201	A	51		LÖTSTÜTZPUNKT	5		
9	1,000	Stk		350-140	A	51		BEZEICHN.SCHILD NSG 432 BEDRUCKT	15		
10	2,000	Stk		107-765	A	51		SR.LI-SCHNEID D3,9X13 DIN7981 (KOPF) VERZ.PASS	15		
11	4,000	Stk		107-766	A	51		SR.LI-SCHNEID D3,9X25 DIN7981 (KOPF) VERZ.PASS	15		
12	1,000	Stk		350-066	A	51		BEZEICHN.SCHILD 430/431	15		
13	1,000	Stk		118-159	A	51		POTI TRIMM 0,5 W 5 K 70°C	5		
14	1,000	Stk		140-811	A	51		KIPPSCHALTER 6 A 50 V	5		
15	0,500	M		104-006	A	51		KABEL-HV F25HV2219 382	5		
16	1,000	Stk	SL4	402-604	A	21		SPIRALSCHNUR 3X0,14MM ZU NSG432	5		
17	0,100	M		103-613	A	51		LITZE TQ0,25 RT/WS	5		
18	0,100	M		103-601	A	51		LITZE TQ0,22 BN	5		
19	0,100	M		103-606	A	51		LITZE TQ0,22 BL	5		
20	0,100	M		103-605	A	51		LITZE TQ0,22 GN	5		
21	0,100	M		103-600	A	51		LITZE TQ0,22 SZ	5		
22	0,100	M		103-604	A	51		LITZE TQ0,22 GB	5		
23	0,100	M		103-607	A	51		LITZE TQ0,22 VT	5		
24	0,100	M		103-608	A	51		LITZE TQ0,22 GU	5		
25	1,000	Stk		155-505	A	51		BUCHSE-JACK D3,5 2-POL UNTERBRECHEND	5		
26	1,000	Stk		200-778	A	51		HALTEBLECH 2 ZU NSG 432	5		
27	1,000	Stk		181-034	A	51		ADAPTER FÜR FRONTPL.BEF. FÜR TRIMMPOTI AD71	5		
28	1,000	Stk		111-426	A	51		WID.MEF- 0,25 W 182 R			
900	1,000	Stk	EZ4	9200-778	A	99		EZ ZU HALTEBLECH 2			
901	1,000	Stk	ZZ2	500-673	A	99		ZZ ZU GEHAUSEH.LINKS ZU NSG 432			
Anderungen			1	3	5	Techn. Klassifiz.:		62.30.00.00			
			2	4	6	Bezeichn.:		1 GEHAUSEHALFTE LINKS KOMPL			
Erstellt: 11.12.86GER			Erfasst: 11.12.86GER			Mikro Film	Bezeichn.:		2 ZU NSG 432		
SCHAFFNER			SCHAFFNER ELEKTRONIK AG CH-4708 LUTERBACH			Seite	1	SL4	402-595	A	31
						ENDE					

9.8 Schematics



SL 402-190

Stück	Gegenstand	Pos.	Werkstoff	Modell	Bemerkung
II I	Aenderungen: I 346 22.2.82			Ersetzt durch:	
				Ersetzt für:	
Stromversorgung zu NSG 430,431,432				Maßstab	Gezeichnet 22.4.81
					Geprüft
				Gelesen 22.9.81	<i>Kull</i>
SCHAFFNER		SCHAFFNER INSTRUMENTS AG CH-4708 Luterbach (Schweiz)		SZ4 600-033	A

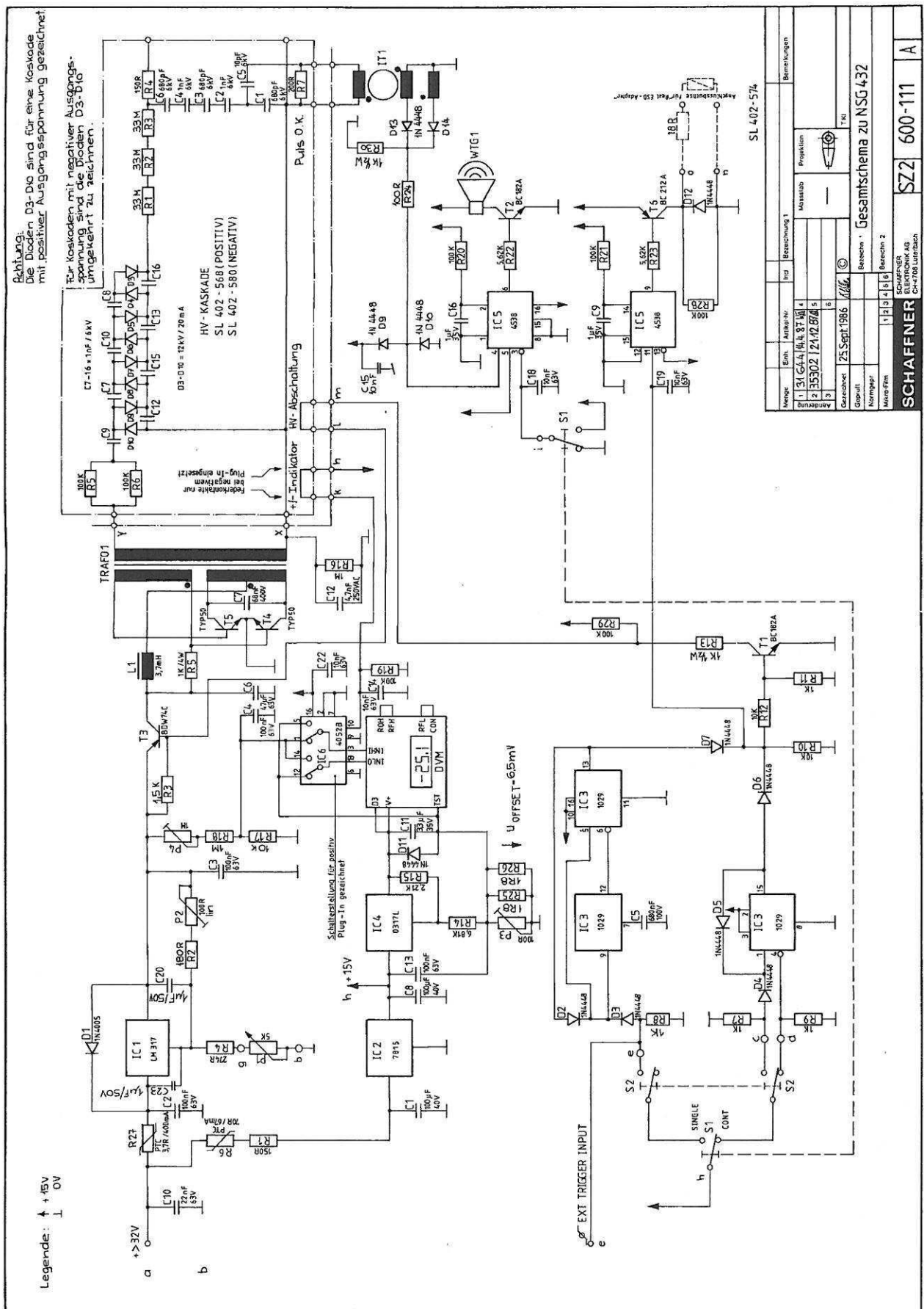


Menge	Einheit	Artikel-Nr.	Ind.	Bezeichnung 1	Bemerkungen
1	31	645	14, 4, 87	W1	4
2					5
3					6

Gezeichnet:	19. Sept. 1986	TKI
Geprüft:		
Normgepr.:		
Mikro-Film:	1 2 3 4 5 6	

SCHAFFNER		ELEKTRONIK AG		CH-4708 Luternbach	
Schema zu NSG432		Stromversorgung		SZ3 600-112	
A		A		A	

Für diese Zeichnung behalten wir uns alle Rechte vor. E 4061/00012-5



Menge		Einheit	Artikel-Nr.	Teil	Bezeichnung	Bemerkungen
1	1	Stk	31 644	IC1	555	
1	1	Stk	31 644	IC2	7815	
1	1	Stk	31 644	IC3	555	
1	1	Stk	31 644	IC4	7817L	
1	1	Stk	31 644	IC5	555	
Gezeichnet		25. Sept. 1986		TK		
Normiert				TK		
Werk-Firm		1 2 3 4 5 6		Bereich 2		
SCHAFFNER						
Gesamtschema zu NSC 432						
Schaffner AG CH-7082 Uster						
SZ2 600-111						A

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Switzerland
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