EMC

Main Frame

NSG 200 D

Manual

Interference Simulator

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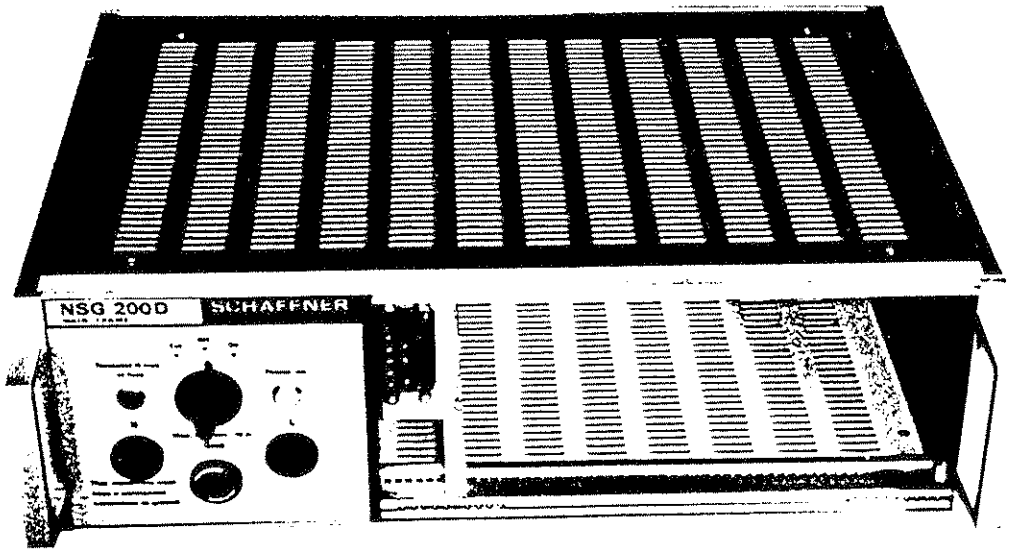
SCHAFFNER

Main Frame

NSG 200 D



1.1 Introduction

Using the NSG 200 series of instruments, different types of mains interference can be simulated. These instruments use plug-in units for different types of interference.

New plug-in units will correspond to different national and international standards and will reflect the latest technology.

The instruments consist of a main frame NSG 200 C or D and different plug-in units.

The following units are available:

MAINFRAME	NSG 200 C or NSG 200 D	contains line switches, line filter, fuses and other elements
PLUG-IN	NSG 203 A	simulates short variations and interruptions in line voltage
	NSG 222	simulates short pulses with fast rise time
	NSG 223	simulates 50 usec. interference pulses with high energy
	NSG 226	Data line interference simulator
	NSG 204	Simulates DC line interruptions

HIGH VOLTAGE TEST SOURCES

INSTRUMENTS	NSG 504	1.2/50 pulse test voltage generator
	NSG 505	Surge transient generator
	NSG 522	Connecting network to superpose NSG 505 pulses on power lines (DC/AC)
	NSG 500 A	Interference simulator for automotive electronic equipments

2.1 Description

The circuit elements that are used for all types of interference simulation are placed in the main frame. These elements are the different mains filters, line switches and fuses. In operation the main frame must be connected to the line voltage (110/120 Volt, 60 c/s) through the line cable. This line voltage will operate the electronic circuits and - if the main switch is on position "on" - it will appear at the terminals L, N and Gnd on the front panel of the instrument with the proper interference added to it.

The interference can however be added to other supply voltages (for example to d.c. or to 400 c/s) by placing the main switch in position "ext" and by applying the proper voltage to the connectors marked "EXT." on the rear panel of the instrument. Now this voltage with the interference applied by the instrument will appear on the front panel at the terminals marked L, N and Gnd.

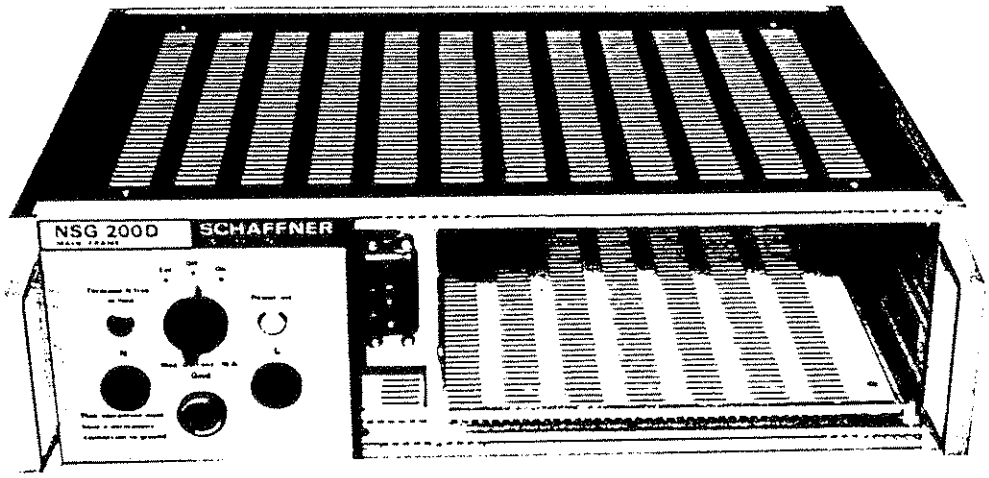
The magnetic switch will interrupt the line current supplied to the instrument under test if it exceeds a value of 16 amp. It will not interrupt an externally applied current.

It is important that the instrument be grounded with a wire attached to the ground terminal on the rear of the instrument. The reason for this is that the capacitors to earth in the mains filter would permit under unfavorable circumstances a current to 2 ma to flow through an operator if

the equipment is not grounded. Since this is very dangerous it is important that the instrument be grounded through a second ground wire to the ground terminal on the rear of the instrument.

If the instrument is to be used at 400 c/s it will be necessary to lift the cover plate of the NSG 200 D and change a connection on the print from the terminal marked "50/60 Hz" to the terminal "400 Hz".

2.1.1 The front panel



A.) Main switch

Off	Instrument disconnected
On	Line voltage appears on terminals marked N, L and Gnd. Power (line voltage) is supplied to electronic circuits.
Ext	Voltages applied to terminals marked "Ext" on rear panel appear on terminals N, L and Gnd. Line voltage is supplied to electronic circuits.

B.) Terminals

L	live	(brown)
N	neutral	(blue)
Gnd	ground	(yellow/green)

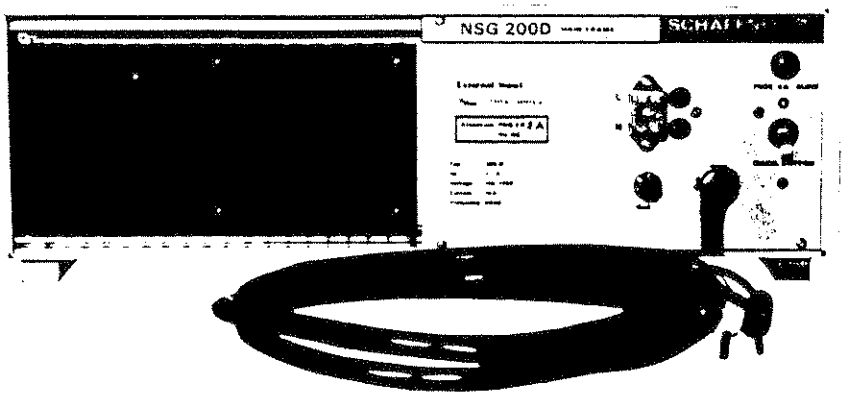
C.) Indicator lamps

Power on — will light up if line voltage is applied to instrument through the mains cable and if the main switch is in positions "on" or "ext".

Fuse/N live — will light up if the mechanical fuse is open or if the terminal N is live. The mechanical fuse located on the rear panel can be reset by hand.

<u>In order to protect the user the instrument should not be operated with the N terminal live.</u>

2.1.2 The rear panel



A.) Ext. Input

Used for adding voltage pulses to supply voltages other than the line voltage and with the NSG 203 A for interrupting a.c. line voltages other than the line voltage.

The connector marked L is connected to the terminal L on the front panel, the connector N to the terminal N if main switch is in position "Ext.".

B.) Ground terminal

Must be used for connecting the instrument to ground.
(Using only the ground through the mains cable is not sufficiently safe).

C.) Fuse 4.0 A slow

This fuse protects the electronic circuits.

D.) Electromechanical Fuse

This fuse limits - on position "on" of the main switch the line current to the terminals N and L. If the fuse has been activated it can be reset by lifting the lever manually.

On position "ext" of the main switch the current to the terminals N and L is not protected by this fuse, separate external fuses should be used.

2.2 Technical data

2.2.1 Electrical data

Operation with line voltage

Max rated voltage	120 V/ 60 c/s
Max rated current	16 Amp.
Magn. fuse	16 Amps (7 msec at 50 amp).
Current to ground	2 mA
Voltage loss (16 Amp. 60 c/s)	7 Volt

Operation with external voltage.

Max rated voltage (=)	400 volts
Max rated voltage (~)	250 volts (RMS)
Max rated current (50/60 c/s and d.c.)	16 Amp.
Max rated current (400 c/s)	6 Amp.
Voltage loss (d.c. and 60 c/s, 16 amp)	7 volts
Voltage loss (400 c/s, 6 amp)	9 volts

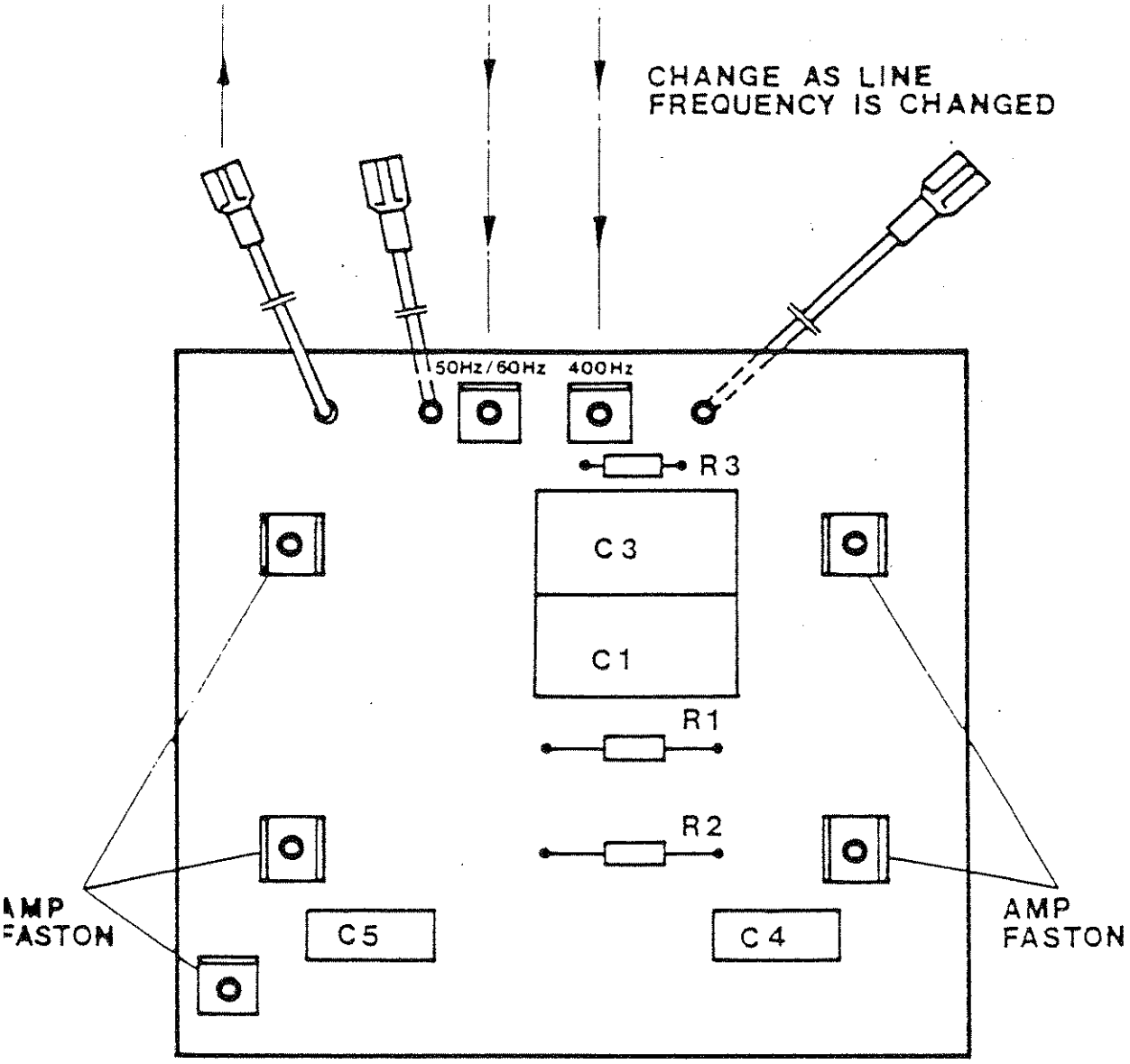
If the equipment is to be operated at 400 c/s it will be necessary to change a connection inside the instrument. On the circuit shown on Fig. 4.31.437 the connection to the AMP terminal marked "50/60 Hz" must be changed to the terminal marked "400 Hz".

2.2.2 Mechanical data

Weight	10.5 kg
Dimensions	435 x 150 x 305 mm
	available on request for mounting in 19" rack.

2.3 Drawings

4.31.437	printed circuit
4.31.439	circuit diagram



	Gegenstand	Pos.	Werkstoff		Modell	Bemerkung

Aenderungen:

Ersetzt durch: .....

Ersatz für: .....

Print zu NSG 200C, D

Maßstab	Gezeichnet	6.9.74 rg	
	Geprüft		
	Gesehen		

HANS SCHAFFNER AG
ELEKTRONISCHE BAUTEILE
4708 Luterbach (Schweiz)

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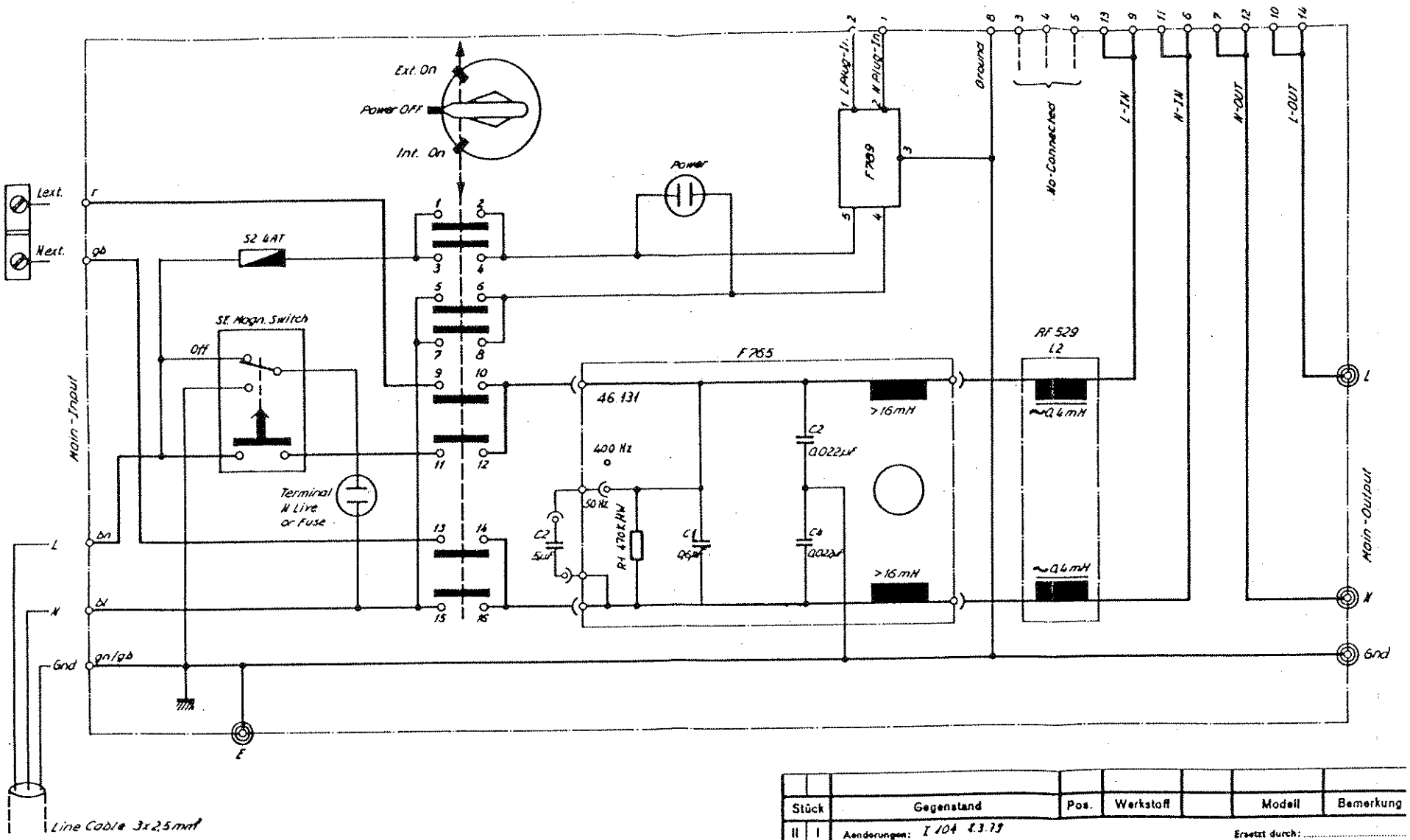
4.31.437



Stück	Gegenstand	Pos.	Werkstoff		Modell	Bemerkung
II I	Aenderungen: I 104 83.73					

Ersetzt durch: .....

Ersatz für: .....

Maine Frame NSG 200D
USA

Maßstab	Gezeichnet	16.9.74
	Geprüft	23.9.74
	Gesehen	

SCHAFFNER — HANS SCHAFFNER ELEKTRONISCHE BAUTEILE, 4708 Luterbach (Schweiz)

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