



## DC Power Supply NGSM 32/10

Voltages and currents at your free choice

- Simulation of motor startup for testing car electronics
- Currents up to 20 A for car hifi applications
- For 12-V and 24-V onboard supplies
- Device under test protected against inappropriate settings using output ON/OFF key
- Ideal for testing mobile phones:
  - excellent RF shielding
  - accurate standby current measurements
- Trend indication for current measurements
- Storage of device setups for short tests
- Acoustic alarm in long-time testing
- Remote control via IEC/IEEE bus or RS-232-C interface
- Great ease of operation
- Use in workshop, lab and production environments



**ROHDE & SCHWARZ**

## Versatile applications

### Mobile radios

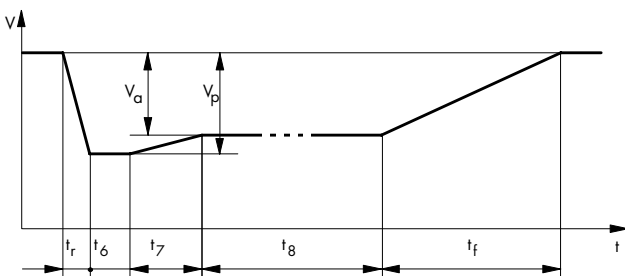
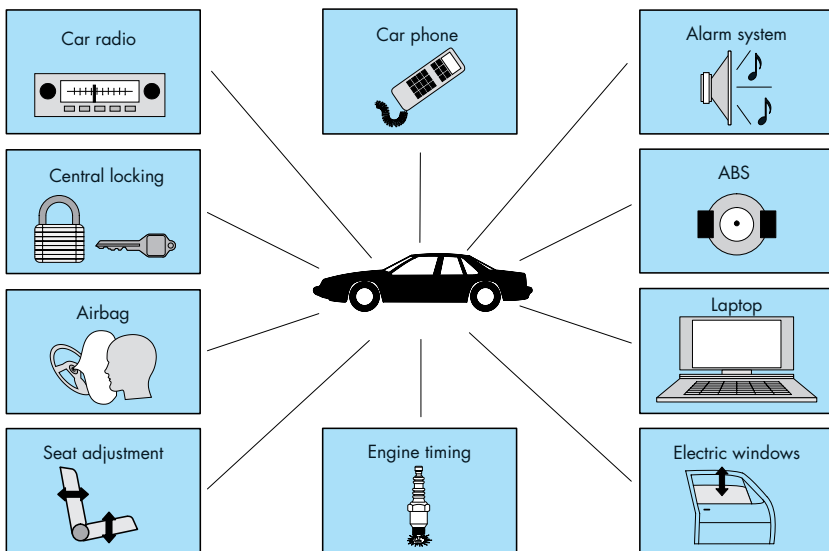
Mobile phones are either operated as handies or from the car supply. The two operating modes place specific requirements on the power supply: for the handy the ready status should be very long in standby and in transmit/receive mode, and for use in the car reliable function is required even in case of typical onboard supply fluctuations. The NGSM supports both types of application. The high resolution for current measurements allows the maximum operating time of a handy to be accurately predicted. The effects of typical voltage dips on the mobile phone in the car can be tested by simulating the motor startup. Power Supply NGSM is insensitive to the RF voltage conducted from a device under test or radiated from a nearby antenna.

The trend indication of current is a simple but very efficient means to check the transmit function of a mobile phone: the technician will immediately recognize whether a Net-C phone has registered. The peak current measurement of the NGSM allows the achieved transmit power to be indirectly estimated and to detect any malfunctions of the mobile from the ratio of peak current to average value.

The power of the NGSM includes sufficient reserves to supply additional peripherals (mobile office). Device settings can be stored to enable efficient short tests of different makes of mobile phones, the changeover from voltage to current regulation being acoustically signalled. The output ON/OFF key allows the user to check the set voltage before applying it to the DUT, thus eliminating the possibility of damage due to incorrect voltage.

Power Supply NGSM 32/10 from Rohde & Schwarz is a very efficient tool for testing electronic components in vehicles by simulating real operating conditions: it can be used as a simple arbitrary generator with output currents up to 20 A. Up to 60 reference values per voltage range can be programmed at intervals of 1 ms to 4 s. On the other hand, precise current measurements can be performed with a high resolution of up to 100  $\mu$ A.

The easy-to-operate Power Supply is ideal for use in garages as well as in labs, production and service of equipment manufacturers.



Startup curve to  
DIN 40839/  
ISO/TR 7637

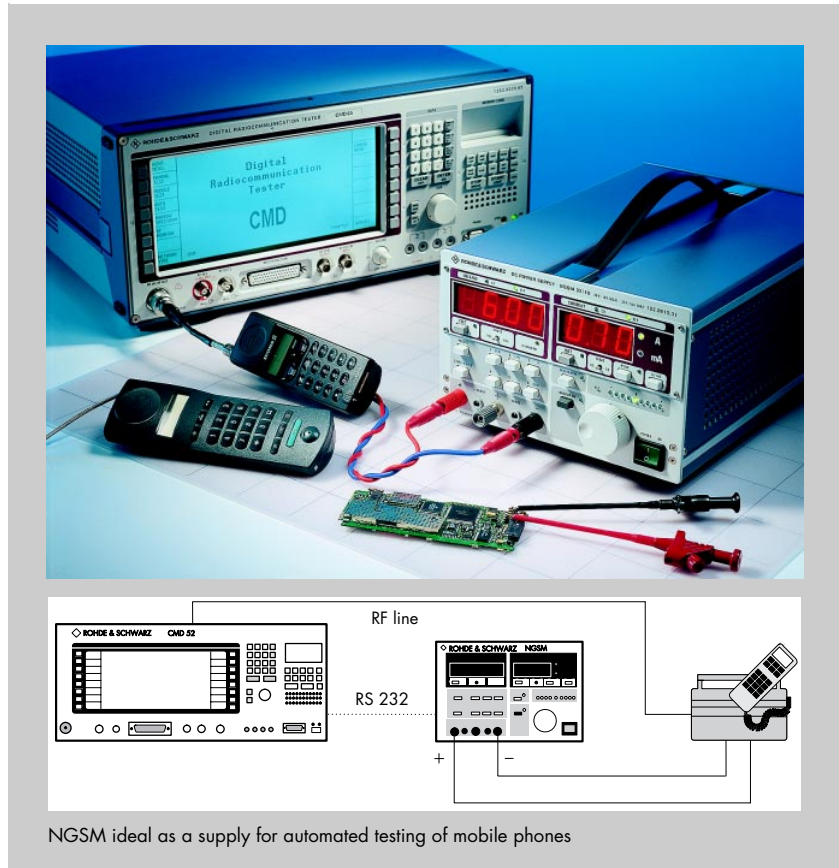
## Car hifi

For reliable testing of car audio equipment, sources with sufficiently high current must be available for tests outside the car. This is no problem for the NGSM. With currents up to 20 A even boosters can be reliably supplied. Equipment for 12-V or 24-V onboard supplies can equally be operated; peak current measurements allow the power loading of devices to be predicted. The startup curve (test pulse 4) can also be simulated, eg to spot problems due to unexpected data loss of theft-proof car radios with security code.

For garages, the storage of instrument settings is a very useful feature facilitating fast testing of equipment brought in as defective.

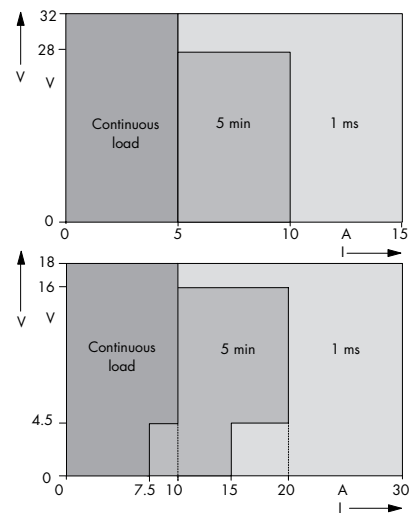
## Car electronics

Very stringent requirements are placed on reliability in the production of electronic car components. High-precision measurements and supply are a matter of course. The NGSM 32/10 is an extremely economical tool for use in this field of application. With the aid of either an IEC/IEEE-488-bus or RS-232-C interface and in conjunction with a 19" adapter (options), the Power Supply NGSM can be integrated into complete in-line production systems. The startup curve in line with DIN 40 839 can be reprogrammed to comply with the required factory standards. It is customary for high surge currents to occur in typical applications, such as central locking or ABS, but with a pulse current capability of up to 30 A, the NGSM is ideally prepared for these applications.



## Compact and easy-to-use

Power Supply NGSM features a large-size, extremely easy-to-read display and simple operation despite its versatile functions. Up to 6 individual settings as well as arbitrary generator data can be stored for each voltage range in a nonvolatile memory. Faults during operation are immediately displayed and an acoustic alarm is also given; for protection of the DUT in the event of a fault, the user can choose between the constant-current mode or automatic switchoff. As an additional safety measure, sensing lines are provided with an integrated protection against wrong polarity.



Current loadability in 18-V and 32-V range

## Specifications

Voltage range	<b>0 to 18 V</b>	<b>0 to 32 V</b>
<b>Constant-voltage source</b>		
Voltage setting	0 to 18.00 V	0 to 32.00 V
Resolution	10 mV	10 mV
Deviation from full scale with $\pm 10\%$ AC supply var. between 0 and 45 °C	<0.4%	<0.2%
from 10 to 90% load current	<0.01%	<0.01%
from 10 to 90% load current	<0.02%/°C	<0.02%/°C
0.01%	0.01%	0.01%
Transient recovery time upon load change	0.1 ms	0.1 ms
PARV, voltage rms	1 mV	1 mV
<b>Constant-current source</b>		
Current setting	0 to 20.0 A	0 to 10.0 A
Resolution in range 0 to 9.99 A	10 mA	10 mA
Resolution in range 10.0 to 20.0 A	100 mA	100 mA
Deviation from full scale with $\pm 10\%$ AC supply var. between 0 and 45 °C	<0.5%	<1.5%
from 10 to 90% load voltage	<0.02%	<0.02%
	<0.05%/°C	<0.05%/°C
	0.2%	0.2%
PARV, current rms	20 mA	20 mA
Current loadability	see diagrams page 3	
ARB function	60 reference values programmable at intervals from 1 ms to 4 s	
<b>Display</b>		
Voltage measurement	0 to 40.00 V	0 to 40.00 V
Resolution	10 mV	10 mV
Deviation from full scale between 0 and 45 °C	<0.2%	<0.1%
Measurement rate	6/s	6/s
Current measurement in mA range	0 to 199 mA	0 to 199 mA
Resolution in range 0 to 99.9 mA	0.1 mA	0.1 mA
Resolution in range 100 to 199 mA	1 mA	1 mA
Deviation from full scale between 0 and 45 °C	<0.5%	<0.5%
	<0.1%/°C	<0.1%/°C

Current measurement in A range	0 to 40.0 A	0 to 40.0 A
Resolution in range 0 to 9.99 A	10 mA	10 mA
Resolution in range 10.0 to 40.0 A	100 mA	100 mA
Deviation from full scale between 0 and 45 °C	<0.5%	<0.5%
Peak current measurement	<0.1%/°C	<0.1%/°C
Resolution	0 to 40 A	0 to 40 A
Deviation from full scale between 0 and 45 °C	100 mA	100 mA
	<2%	<2%
	<0.2%/°C	<0.2%/°C

### General data

Outputs	max. 120 V DC, floating
Voltage compensation	0.5 V per lead (remote sensing)
Rated temperature range	0 to +45 °C
Storage temperature range	-40 to +60 °C
RFI suppression	to VDE 0871 B
Electrical safety	VDE 0411; class 1 (safety ground)
AC supply	100/120/220/240 V $\pm 10\%$ , 50 to 60 Hz, 690 VA
Dimensions (W x H x D); weight	211 mm x 150 mm x 350 mm; 8 kg
Instrument drivers available for	LabWindows/CVI 4.x LabView 4.x HP VEE 3.2

## Ordering information

<b>Power Supply</b>	NGSM 32/10	0192.0810.31
<b>Options</b>		
19" Adapter (3 HU)	NGSM-B0	0192.0810.00
RS-232-C Interface (eg for use with CMD)	NGSM-B1	0192.0810.01
IEC-625/IEEE-488 Interface (listener/talker)	NGSM-B2	0192.0810.02



Local Rohde & Schwarz representative:



# ROHDE & SCHWARZ

ROHDE & SCHWARZ GmbH & Co. KG · Mühldorfstraße 15 · D-81671 München

P.O.B. 801469 · D-81614 München · Telephone +49 89 41 29-0 · Fax +49 89 41 29-3723 · Internet: <http://www.rsd.de>