SSP-KONSTANTER, Series 62 N
Computer Controlled Laboratory Power Supplies

- 500 W, 1000 W output power
- Measuring functions for voltage, current and power with extreme value memory
- Minimal residual ripple and short response times
- IEEE488/RS232C or RS232C interfaces (plug-in module option)
- Integrated sequence function (arbitrary function) for the generation of voltage and current profiles with automatic sequence
- Storage of 10 device configurations
- Output can be activated and deactivated
- Lockable operating elements
- Master-slave operation is possible
- Overvoltage, overcurrent and excessive temperature protection
- Compact design, lightweight and minimal power loss thanks to switching controller technology

Description

SSP KONSTANTER (single-output system power supplies) DC power supplies can be manually or remote controlled for laboratory or systems applications. Despite high output power, the devices are small in size and lightweight as well.

The floating output is provided with protective isolation from the mains power supply, as well as all optional computer interfaces, and has been classified as a safety extra-low voltage circuit (SELV) in accordance with VDE / IEC. Nominal power supplied by the voltage and current controlled output can be delivered over widely adjustable voltage and current ranges.

These devices are generally equipped with operating elements and displays, as well as an analog interface. An optional IEEE488/RS232C or an RS232C interface can be inserted into the device in order to link it to computer controlled systems.

Manual adjustment of voltage and current is accomplished by means of two rotary knobs with adjustable resolution. A wide variety of additional functions can be selected with the keys. Two 4-place digital LED displays provide information concerning measurement and set values. Current operating modes, selected display parameters and the status of device and interface functions are indicated with LEDs.

The analog interface allows for the adjustment of output voltage and current with external control voltages, and for the linking of several devices in the master-slave operating mode. The power output can be activated and deactivated, the front panel can be locked, and stored configurations can be recalled via the floating optocoupler input.

Range of Applications

Electrical and electronic devices may be subjected to substantial supply power fluctuations depending upon where they are used and prevailing ambient conditions.

The automotive electrical system characteristics which can be observed when the starter motor is cranked is a typical example. R&D, production and testing departments must therefore assure that electrical equipment reliably fulfills all of the required functions at any point in time under adverse conditions.

Series 62 N SSP KONSTANTERs provide the user with a number of functions for solutions to these problems.

High throughput rates can be achieved with automatic systems for routine testing in combination with the SSP KONSTANTER.

Short response time assures highly accurate simulation of rapidly changing voltage or current profiles.

The performance of consuming devices as related to dynamic supply power can thus be easily tested and simulated.
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Adjustable Functions

- Voltage and current setpoints
- Voltage and current limit values (soft limits)
- Output activation and deactivation
- Overvoltage protection trigger value
- Overcurrent protection (limiting with or without shutdown)
- Delay time for overcurrent shutdown
- Power-on status
- Reset device configurations
- Save device configurations to memory
- Recall device configurations individually or sequentially
- Select trigger input function
- Rounding of measurement value for display purposes
- Service request masks (SRQ) *
- Activate and deactivate digital displays *
- Start self-test at power-up *

* Only via computer interface

Auto-Sensing

Operation in the sensing mode (remote sensing) can be activated in order to compensate for voltage drops at the power lines. The sensing mode is automatically activated by connecting the (-) negative sensing terminal to the negative load level. Max. compensatable voltage drop 1 V per line

Locking of Front Panel Operation

The control elements can be secured against unauthorized use by pressing a key, with a computer command, or by applying a signal to the trigger input.

Activating and Deactivating the Output

The power output can be activated and deactivated by pressing a key, with a computer command, or by applying a signal to the trigger input (no electrical isolation).

Power-On Status

The power supply can be placed into one of the following conditions after power-up:
- Reset = default setting (0 V, 0 A, output inactive etc.)
- Recall = last setting (same as prior to last shutdown)
- Standby = last setting, but with inactive output

Overcurrent Protection

The device can be configured to respond to current limiting in one of the following ways:
- OCP off = continuous current limiting (UI characteristic curve)
- OCP on = deactivate output if duration of current limiting is greater than delay time
  Delay time: setting range from 0.00 to 99.99 s resolution: 10 ms

Trigger Selection

The device can be configured to respond to the floating trigger input at the analog interface in one of the following ways:
- output = activate / deactivate the power output
- local lock = lock the control elements
- recall = individual, step-by-step recall of stored settings
- sequence = start / stop the sequence function (arbitrary function)

Acquirable Information

- Current voltage and current measurement values
- Min. and max. voltage and current measurement values
- Current output power
- Current device settings
- Current device status (control mode, excessive temperature, busy *)
- Occurred event (power or phase failure, excessive temperature, overvoltage, overload, program error *)
- Device ID *

* Only via computer interface

Protective and Additional Functions

- Sensor terminals protected against pole reversal with automatic switching to sensing mode (auto-sensing)
- Protection against excessive temperature
- Protection against output pole reversal
- Locking of front panel operation
- Device configuration memory with battery backup
- Power and phase failure recognition
- In-rush current limiting

* Only via computer interface
Extreme Measurement Value Memory

The MIN-MAX function causes automatic acquisition and storage to memory of minimum and maximum voltage and current measurement values.

Memory Function

Device configurations can be saved to, and recalled from the memory with battery backup. The memory has two storage areas:
- 10 memory locations for complete configurations
- 245 memory locations for the sequence function (arbitrary function) (voltage setpoint USET, current setpoint ISET, dwell time TSET)

Sequence Function (Arbitrary Function)

The sequence function allows for automatic recall of settings which have been saved to the sequence memory.

The sequence function (arbitrary function) includes the following parameters:
- START = beginning memory location address
- STOP = ending memory location address
- REPETITION = number of sequence repetitions
  (1 to 255 or 0 = continuous repetition)
- TSET = dwell time specific to memory location
  (10 ms to 99.99 s)
- TDEF = dwell time independent of memory location
  (10 ms to 99.99 s)

Application Example:
Generation of a voltage profile in accordance with DIN 40839 (automotive electrical system while cranking the starter motor)

Scope of delivery

Mains power cable
Installation set for 19" rack mounting
Operating instructions (printed)

Order Information

<table>
<thead>
<tr>
<th>Description (short name)</th>
<th>Article number</th>
</tr>
</thead>
<tbody>
<tr>
<td>62 N 52 RU 50 P</td>
<td>K345A</td>
</tr>
<tr>
<td>62 N 80 RU 12.5 P</td>
<td>K341A</td>
</tr>
<tr>
<td>62 N 80 RU 25 P</td>
<td>K343A</td>
</tr>
<tr>
<td>IEEE488/RS232 interface, for SSP-62/64N-BZ3</td>
<td>K382A</td>
</tr>
<tr>
<td>RS232 interface, for SSP-62/64N-BZ3</td>
<td>K383A</td>
</tr>
</tbody>
</table>

Installation Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Note</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Cable RS-232, 2 m</td>
<td>For connecting a device to an RS-232 interface (extension cable 9-pin socket / 9-pin plug)</td>
<td>GTZ32410 00R0001</td>
</tr>
</tbody>
</table>

Applicable Standards and Regulations

| IEC 61010-1/EN 61010-1/ VDE 0411-1 | Safety regulations for electrical measurement, control and laboratory devices |
| EN 60529 VDE 0470 Part 1 | Test instruments and test procedures protection provided by enclosures (IP code) |
| DIN EN 61326 VDE 0843 Part 20 | Electrical equipment for measurement, control and laboratory use - EMC requirements |

Note:
Maintenance of voltage rise and decay times can only be assured within a limited load impedance range.
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General Characteristics

Output
Controller principle Primary switching controller
Operating modes Adjustable constant voltage/constant cur-
rent source with automatic sharp transition
Output isolation Floating output with protective isolation
from mains power supply and computer
interfaces;
max. admissible potential output–earth 120 V
Capacity output–earth (housing)
500 W / 1000 W: typ. 90 nF

Output Working Ranges

![Graph showing output working ranges (U/V, Pnom, Ptyp, Pdyn, Inom)]

Output–Mains 280 Veff 4 kV ~ (type test)
Output–Bus / Earth 120 V
Mains–Bus / Earth 230 Veff 2.2 kV –
Bus–Earth no isolation

Analog Interface
Functions
– Sensing mode
– Programmable trigger input
– Voltage control input (0 ... 5 V)
– Current control input (0 ... 5 V)
– Voltage monitor output (0 ... 10 V)
– Current monitor output (0 ... 10 V)
– Master-slave parallel operation
– Master-slave series operation

IEC-625/IEEE 488 Interface (joint option with RS-232, Variant 2)
Interface functions
SH1 – SOURCE HANDSHAKE
AH1 – ACCEPTOR HANDSHAKE
T6 – TALKER
L4 – LISTENER
TE0 no extended talker function
LE0 no extended listener function
SR1 – SERVICE REQUEST
RL1 – REMOTE / LOCAL
DC1 – DEVICE CLEAR
PP1 – PARALLEL POLL
DT1 – DEVICE TRIGGER
C0 no controller function
E1 / 2 – Open collector driver

Codes / formats in accordance with IEEE 488.2
max. settings approx. 40 settings / s
max. meas. rate approx. 15 measurements / s

V.24 / RS 232C Interface (option variant 1 or 2)
Transmission mode half-duplex, asynchronous
Transmission speed 110 ... 19200 baud, adjustable
Codes / formats in accordance with IEEE 488.2
max. setting rate approx. 2 settings / s
max. meas. rate approx. 2 measurements / s

Power Supply
Mains voltage 230 V ~ +10 / –15 %;
47 ... 63 Hz
Making current max. 50 A
Mains fuse 1 x M 15 A / 250 V
(6.3 x 32 mm), UL

Electrical Safety
Safety Class I
Measuring Category II for mains input
I for output and interfaces
Contamination Level 2
Earth Leakage Current < 3 mAeff

Electrical isolation Rated Voltage Test Voltage
Output – Mains 280 Veff 4 kV ~ (type test)
Output – Bus / Earth 120 V
Mains – Bus / Earth 230 Veff 2.2 kV –
Bus – Earth no isolation

IEC 61010-1: 1990 + A1: 1992
DIN EN 61010-1: 1993
VDE 0411-1: 1994
DIN VDE 0805: 1990
EN 60950: 1992
EN 61010-2-010: 1993

Protection
IP 00 for terminals on device side and
interface terminals
IP 20 for housing

Extract from table on the meaning of IP codes

<table>
<thead>
<tr>
<th>IP XY (1st digit X)</th>
<th>Protection against foreign object entry</th>
<th>IP XY (2nd digit Y)</th>
<th>Protection against the penetration of water</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>not protected</td>
<td>0</td>
<td>not protected</td>
</tr>
<tr>
<td>1</td>
<td>≥ 50.0 mm Ø</td>
<td>1</td>
<td>vertically falling drops</td>
</tr>
<tr>
<td>2</td>
<td>≥ 12.5 mm Ø</td>
<td>2</td>
<td>vertically falling drops with enclosure tilted 15°</td>
</tr>
</tbody>
</table>

Electromagnetic Compatibility (EMC)
Interference Emission EN 55022: 1998 class A
Interference Immunity EN 61000-4-2: 1995 performance feature B
EN 61000-4-4: 1995 performance feature C
EN 61000-4-5: 1995 performance feature B
EN 61000-4-6: 1996 performance feature B
EN 61000-4-11: 1994 performance feature A
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Ambient Conditions

<table>
<thead>
<tr>
<th>Category</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climatic category</td>
<td>KYG per DIN 40 040</td>
</tr>
<tr>
<td>Operation</td>
<td>0 bis 40 °C</td>
</tr>
<tr>
<td>Storage</td>
<td>–20 bis +70 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humidity</th>
<th>Relative Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>≤ 75 %</td>
</tr>
<tr>
<td>Storage</td>
<td>≤ 65 %</td>
</tr>
</tbody>
</table>

Cooling

- by integrated fan
- (2-stage temperature-controlled)
- Air inlet: side panels
- Air outlet: rear panel

Operating noise

- Sound pressure level at a distance of 30 cm
  - Front: 18 / 28 dBA
  - Rear: 23 / 35 dBA
  - Left, right: 20 / 30 dBA

Mechanical Characteristics

Device Type

- Benchtop device, suitable for rack mounting

Dimensions

- (W x H x D) see also dimensional drawings
  - 19” x 2 std. height units x 500 mm

Weight

- 500 W: approx. 12 kg
- 1000 W: approx. 13 kg

Interface RS 232C (optional) approx. 0.1 kg

Interface IEEE 488 / RS 232C (optional) approx. 0.14 kg

Terminals (rear panel)

Mains input

- 10-A-IEC inlet connector
- with earth contact (L + N + PE)

Output

- Rails with drill holes for M8 screws and
- 4 mm diameter drill holes

Analog interface

- 14-pin plug connector with screw terminals

Interface Options

- a) RS 232C
- b) IEEE 488/RS 232C

RS 232C Interface

- 9-pin sub-D socket connector
- DIN 41652

Pin Assignment

- Pin 2: TXD (transmitted data)
- Pin 3: RXD (received data)
- Pin 5: GND (Earth)

IEC 625 / IEEE 488 interface

- 24-pin IEEE 488 socket connector
- IEC 625.1, IEEE 488.1

Pin assignment

For twisting with opposite cables

Remote Enable

Data Bus

- Shield connected to earth
- Attention
- Service Request
- Interface Clear
- Not Data Accepted
- Not Ready for Data
- Data Valid
- End or Identify
- Data Bus
### SSP-KONSTANTER, Series 62 N
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**Electrical Data for 52 V Models**

Unless otherwise specified, entries are maximum values and apply within an operating temperature range of 0 to 50°C after a warm-up period of 30 minutes.

<table>
<thead>
<tr>
<th>Article Number</th>
<th>K345A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>62 N 52 RU 50 P</td>
</tr>
</tbody>
</table>

#### Nominal output data
- Voltage setting range: 0 ... 52 V
- Current setting range: 0 ... 50 A
- Power: max. 1000 W

#### Output characteristics
- (ppm and percentage values make reference to the respective setting or measuring range)

**Setting resolution**
- Voltage: 16.7 mV
- Current 1): 12.5 mA

**Setting accuracy (at 23 ± 5°C)**
- Voltage: 0.1% ± 17 mV
- Current: 0.2% ± 50 mA

**Temperature coefficient of the setting ∆/K**
- Voltage: 50 ppm +0.2 mV
- Current: 100 ppm +0.2 mA

**Static system deviation**
- with 100% load fluctuation
  - Voltage: 0.01% ± 5 mV
  - Current: 0.05% ± 20 mA

**Static system deviation**
- with 15% line voltage fluctuation
  - Voltage: 0.01% ± 5 mV
  - Current: 0.03% ± 15 mA

**Residual ripple**
- Uo: Ripple 10 Hz … 300 Hz: 15 mVss
  - Ripple 10 Hz … 300 kHz: 30 mVss
  - Ripple + noise 10 Hz … 10 MHz: 50 mVss / 10 mVeff
  - Ripple + noise 10 Hz … 10 MHz: 25 mAeff

**Output voltage transient recovery time with load step within range of 20 to 100% Inominal**
- Tolerance
  - ΔI = 10%: 80 mV
  - ΔI = +80%: 100 μs
  - ΔI = -80%: 300 μs

**Output voltage over and undershooting with load step within range of 20 to 100% Inominal**
- ΔI = 10%: 150 mV
  - ΔI = 80%: 750 mV

**Output voltage response time 3) where Uset step = 0 V –> Unominal**
- No load, nominal load: 8 ms, 12.5 ms
  - No load, nominal load: 150 ms, 12.5 ms

**Output capacitor discharging circuit**
- Nominal value: 2000 μF
- Power: 25 W

**Measuring Function**

<table>
<thead>
<tr>
<th>Measuring Range</th>
<th>Voltage</th>
<th>Current</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range: local, remote</td>
<td>-2.666 ... +58.770 V</td>
<td>-1.92 ... +53.37 A</td>
<td>0 ... &gt;1100 W</td>
</tr>
<tr>
<td>Measuring resolution: local, remote</td>
<td>10 mV, 3.3 mV</td>
<td>10 mA, 10 mA</td>
<td>1 W, 0.1 W</td>
</tr>
<tr>
<td>Measuring accuracy (at 23 ± 5°C)</td>
<td>0.05% ±20 mV</td>
<td>0.3% ±30 mA</td>
<td>0.4% ±1.5 W</td>
</tr>
<tr>
<td>Measured value temperature coefficient ∆/K</td>
<td>80 ppm +0.2 mV</td>
<td>150 ppm +0.2 mA</td>
<td></td>
</tr>
</tbody>
</table>

**Protective functions**

| Trigger value for output overvoltage protection | Setting range | 3 ... 62.5 V |
| Response time | Setting resolution | 100 mV |
| Res. polarity protection load capacity | Setting accuracy | 0.3% + 100 mV |
| Res. voltage withstand capacity | Response time | 200 μs |
| Additional Functions | Continuous | 55 A |
| Compensatable voltage drop per line | Continuous | 60 V |
| Sensing mode operation | Compensatable voltage drop per line | 1 V |

**General**

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Line voltage</th>
<th>230 V– + 10 / – 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption</td>
<td>At nom. load</td>
<td>1800 VA, 1200 W</td>
</tr>
<tr>
<td>Efficiency</td>
<td>At no load</td>
<td>50 mA, 25 W</td>
</tr>
<tr>
<td>Max. power loss</td>
<td>&gt; 80%</td>
<td></td>
</tr>
<tr>
<td>Switching frequency</td>
<td>Typical</td>
<td>200 kHz</td>
</tr>
<tr>
<td>Inrush current</td>
<td>Max.</td>
<td>50 A</td>
</tr>
<tr>
<td>Fuses</td>
<td>1 ea. M 15 A / 250 V (6.3 x 32 mm, UL)</td>
<td></td>
</tr>
<tr>
<td>MTBF</td>
<td>At 40°C</td>
<td>&gt; 47,000 h</td>
</tr>
</tbody>
</table>

1) Current setting values are rounded off at the digital display to multiples of 10 mA (< 100 A) or 100 mA (> 100 A).
2) In sensing mode at the output terminals
3) At maximum current setting not including processing time for the previous voltage setting command
### SSP-KONSTANTER, Series 62 N

**Computer Controlled Laboratory Power Supplies**

Electrical Data for 80 V Models: xx N 80 RU ...

Unless otherwise specified, entries are maximum values and apply within an operating temperature range of 0 to 50° C after a warm-up period of 30 minutes.

<table>
<thead>
<tr>
<th>Article Number</th>
<th>K341A</th>
<th>K343A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>62 N 80 RU 12.5 P</td>
<td>62 N 80 RU 25 P</td>
</tr>
</tbody>
</table>

#### Nominal output data

<table>
<thead>
<tr>
<th>Voltage setting range</th>
<th>0 ... 80 V</th>
<th>0 ... 80 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current setting range</td>
<td>0 ... 12.5 A</td>
<td>0 ... 25 A</td>
</tr>
<tr>
<td>Power</td>
<td>max. 500 W</td>
<td>max. 1000 W</td>
</tr>
</tbody>
</table>

#### Output characteristics (ppm and percentage values make reference to the respective setting or measuring range)

<table>
<thead>
<tr>
<th>Setting resolution</th>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting accuracy (at 23 ± 5°C)</td>
<td>Voltage</td>
<td>Current</td>
</tr>
<tr>
<td>Temperature coefficient of the setting Δ / K</td>
<td>Voltage</td>
<td>Current</td>
</tr>
<tr>
<td>Static system deviation with 100% load fluctuation</td>
<td>Voltage</td>
<td>Current</td>
</tr>
<tr>
<td>Static system deviation with 15% line voltage fluctuation</td>
<td>Voltage</td>
<td>Current</td>
</tr>
</tbody>
</table>

#### Residual ripple

<table>
<thead>
<tr>
<th>U₀</th>
<th>Ripple 10 Hz … 300 Hz</th>
<th>35 mVₚₛₚₚ</th>
<th>35 mVₚₛₚₚ</th>
</tr>
</thead>
<tbody>
<tr>
<td>I₀</td>
<td>Ripple 10 Hz … 300 kHz</td>
<td>50 mVₚₛₚₚ</td>
<td>50 mVₚₛₚₚ</td>
</tr>
<tr>
<td>I₀</td>
<td>Ripple + noise 10 Hz … 10 MHz</td>
<td>60 mVₚₛₚₚ / 10 mVₑ₀ₚ</td>
<td>80 mVₚₛₚₚ / 15 mVₑ₀ₚ</td>
</tr>
<tr>
<td>I₀</td>
<td>Ripple + noise 10 Hz … 10 MHz</td>
<td>15 mAₑ₀ₚ</td>
<td>20 mAₑ₀ₚ</td>
</tr>
</tbody>
</table>

#### Output voltage transient recovery time with load step within range of 20 to 100% Inominal

<table>
<thead>
<tr>
<th>Tolerance</th>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ = 10 %</td>
<td>100 μs</td>
<td>100 μs</td>
</tr>
<tr>
<td>Δ = 80 %</td>
<td>700 μs</td>
<td>400 μs</td>
</tr>
</tbody>
</table>

#### Output voltage over and undershooting with load step within range of 20 to 100% Inominal

<table>
<thead>
<tr>
<th>Δ = 10 %</th>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ = 80 %</td>
<td>200 mV</td>
<td>650 mV</td>
</tr>
</tbody>
</table>

#### Output voltage response time

<table>
<thead>
<tr>
<th>Tolerance</th>
<th>Where Uset step = 0 V → Unominal No load, nominal load</th>
</tr>
</thead>
<tbody>
<tr>
<td>160 mV</td>
<td>5 ms, 15 ms</td>
</tr>
<tr>
<td>160 mV</td>
<td>5 ms, 15 ms</td>
</tr>
</tbody>
</table>

#### Output capacitor discharging circuit

<table>
<thead>
<tr>
<th>Nominal value</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 μF</td>
<td>25 W</td>
</tr>
</tbody>
</table>

### Measuring Function

#### Measuring Range

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4.00 ... +88.16 V</td>
<td>-0.48 ... +13.34 A</td>
</tr>
<tr>
<td>-4.00 ... +88.16 V</td>
<td>-0.46 ... +26.68 A</td>
</tr>
</tbody>
</table>

#### Measuring resolution: local, remote

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mV</td>
<td>2 / 10 mA, 2 mA</td>
</tr>
<tr>
<td>10 mV</td>
<td>1 W, 0.1 W</td>
</tr>
</tbody>
</table>

#### Measuring accuracy (at 23 ± 5°C)

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05% ±40 mV</td>
<td>0.3 % +10 mA</td>
</tr>
<tr>
<td>0.4% ±1 W</td>
<td>0.4% ±1.5 W</td>
</tr>
</tbody>
</table>

#### Measured value temperature coefficient Δ / K

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 ppm ±0.4 mW</td>
<td>150 ppm ±0.1 mA</td>
</tr>
<tr>
<td>80 ppm ±0.4 mW</td>
<td>150 ppm ±0.1 mA</td>
</tr>
</tbody>
</table>

### Protective functions

#### Trigger value for output overvoltage protection

<table>
<thead>
<tr>
<th>Setting range</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 ... 100 V</td>
<td>3 ... 100 V</td>
</tr>
</tbody>
</table>

#### Response time

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 μs</td>
<td>200 μs</td>
</tr>
</tbody>
</table>

### Additional Functions

#### Sensing mode operation Compressible voltage drop per time

General

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Line voltage</th>
</tr>
</thead>
</table>

#### Power consumption

<table>
<thead>
<tr>
<th>At nom. load</th>
<th>At no load</th>
</tr>
</thead>
<tbody>
<tr>
<td>1150 VA, 680 W</td>
<td>50 VA, 25 W</td>
</tr>
</tbody>
</table>

#### Efficiency

<table>
<thead>
<tr>
<th>At nom. load</th>
<th>&gt; 74 %</th>
</tr>
</thead>
</table>

#### Switching frequency

<table>
<thead>
<tr>
<th>Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 kHz</td>
</tr>
</tbody>
</table>

#### Inrush current

<table>
<thead>
<tr>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 A</td>
</tr>
</tbody>
</table>

#### Fuses

<table>
<thead>
<tr>
<th>1 ea. M 15 A / 250 V (6.3 x 32 mm, UL)</th>
</tr>
</thead>
</table>

#### MTBF

<table>
<thead>
<tr>
<th>40 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 47,000 h</td>
</tr>
</tbody>
</table>

---

1 Current setting values are rounded off at the digital display to multiples of 10 mA (< 100 A) or 100 mA (> 100 A).
2 In sensing mode at the output terminals
3 At maximum current setting not including processing time for the previous voltage setting command
Here is the plug-in possibility for optional interfaces IEEE-488/RS 232C or RS 232C. Interface IEEE-488/RS 232C (material No. K382A) is shown.

Dimensions in millimeter
SSP-KONSTANTER, Series 62 N
Computer Controlled Laboratory Power Supplies