

DC POWER FOR TEST RIG AND LAB

LABORATORY POWER SUPPLIES
ELECTRONIC LOADS





Laboratory power supplies by GMC-I Messtechnik, known under the name of GOSSEN KONSTANTER, unite state-of-the-art circuit technologies, functional diversity and absolute reliability.

Do you remember the germanium transistor? The triumph of electronics began with this semiconductor, as well as the era of the KONSTANTER.

We were one of the first European manufacturers to begin series production of adjustable, electronically stabilized direct current power supplies, and at that time, in 1958, users placed only minimal demands on such devices. The customers were happy to have any practical alternative at all to the previously used multi-range rectifiers and battery packs.



Konstanter 1958

It certainly speaks for the quality of our devices when a satisfied customer reports that his “good old KONSTANTER” still functions reliably after well over 20 years of use. But is the use of such a device in keeping with the times, or even advantageous? The times have indeed changed, as well as the conditions of use and the requirements. Today you can rightfully demand a lot more from a laboratory power supply than constant voltage and regulated current.

Electrical and electronic products today fulfill a broader range of tasks and encompass more extensive functions. This means more extensive testing and more in-depth examination for you as a manufacturer or user of such products. As a rule, the range of required testing is also extended by new regulations. And at the same time, productivity must be increased.

The fulfillment of these requirements demands a high level of creativity, farsightedness and cost awareness. Here, the recognition and exploitation of possible areas of application provided by modern test equipment play an important role.

The contemporary KONSTANTER offers a great deal of potential in this area. It includes a multitude of advantageous functions and special features, which result from the desires and suggestions of a large number of users from the most varied areas of application.



Current Syskon Laboratory Power Supply

The advantages start with the functional housing: All devices are suited for laboratory test bench operation as well as for mounting to a 19" rack. Our KONSTANTERs can be easily integrated in demanding applications in the fields of Research & Development, production or (long-term) test systems.

Thanks to their uniquely short response times, our KONSTANTERs are particularly suited for the generation of complex test signals or the superimposition of low-frequency signals on the output via analogue controlled inputs.

The data memories of the SSP and SYSKON models allow for the storing of U/I time profiles with automatic sequences.

Depending on the model, the available interfaces are analogue, RS232, IEEE488 (GPIB) or USB.

In addition to power supply technology, GOSSEN METRAWATT offers a range of electronic loads which is distinguished by short response times, programming capabilities as well as comprehensive functionality.

**SYSKON P SERIES**

SYSKON P SERIES 500 ... 4500 W
PAGE 06

**SSP 32N KONSTANTER
SLP 32N KONSTANTER**

SSP 32N KONSTANTER 120 ... 320 W
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SLP 32N KONSTANTER 120 ... 320 W
PAGE 08

**LABKON P SERIES
LSP 32K KONSTANTER**

LABKON P SERIES 500 ... 800 W
PAGE 09



LSP 32K KONSTANTER 90 ... 108 W
PAGE 09

**ELECTRONIC LOADS
SPL / SSL**

SPL SERIES 200 ... 400 W
PAGE 10



SSL SERIES 150 ... 300 W
PAGE 10

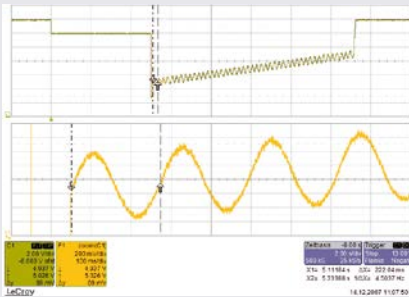


RANGE OF APPLICATIONS

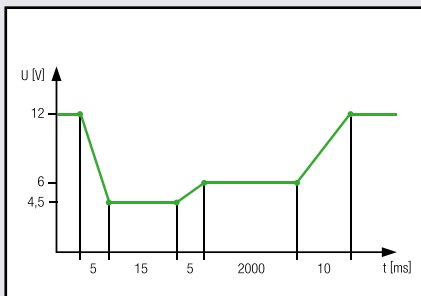
Application Examples

Example:

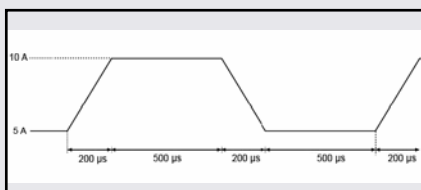
Automotive electrical and electronics



Oscillogram of SYSKON output voltage - starter motor curve with rising sine. Sine function integrated into the sequence as a subprogram.



Simulation of a voltage curve in an automotive electrical system when starting the engine.



Fast transient measurement of the connected DUT with separate setting options for high/low level, rise and fall time

Production and Testing

- Automotive electrical and electronics
- Surface finishing
- Telecommunications technology
- Computer sciences
- Control and drive technology
- Frequency converters
- Motors
- Power semiconductors
- Uninterruptible power supply (UPS) systems
- Circuit breakers and protective motor switches
- Lamps
- Plasma deposition
- Consumer electronics
- Railway technology

Research and Development

- Semiconductor production and processing
- Power and hybrid technology
- Fuel cells
- Photovoltaics
- Energy storage and solar technology
- Batteries
- Capacitors
- Superconducting magnets
- Laser diodes
- Aviation and aerospace
- Defense technology



RANGE OF APPLICATIONS

Application Examples

Automotive Electrical and Electronics



During the development of electrical and electronic automotive components, these must also be tested for their performance with distorted voltage. Testing is based upon diverse voltage sequences which are specified in the EMC standards or by the automobile manufacturers. The short response times and the sequence function offered by the GOSSEN METRAWATT KONSTANTERs are very useful of in this area.

These components are frequently produced with automated machines all year long, 24 hours a day. KONSTANTERs can be easily incorporated into the utilized manufacturing systems via convenient interfaces and free software. And thanks to their outstanding reliability, continuous operation is no problem for the devices.

Energy Storage Technologies



Wind and sun – these are the key words to describe the energy sources of the future. In the foreseeable future, our energy will come solely from regenerative sources. The fact, however, that these sources are not available at any time or at the same energy level leads to a potential risk in the form of massive fluctuations within the energy grid.

Therefore the significance of energy storage technologies – mostly in the form of batteries – will increase to ensure the stability of the grid. The test & measurement technology to check lifetime, capacity and efficiency among many other parameters is part of our product portfolio. With power supplies and electronic loads from GOSSEN METRAWATT charge/discharge cycles, endurance as well as stress tests – to mention but a few applications – can be conducted conveniently, either manually or in an automated environment.

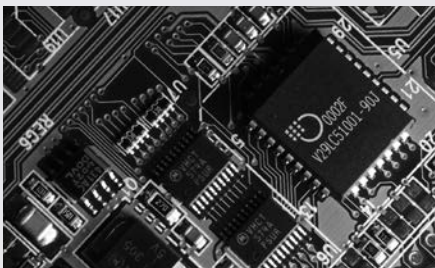
Medical Technology



Those who seek out and develop innovative solutions are confronted with challenges again and again. The functional requirements for a universal power supply are accordingly diverse.

GOSSEN METRAWATT KONSTANTERs leave nothing to be desired in this respect, and all of the essential functions are nevertheless easy to use. And in order to assure that the valuable prototype is not damaged – due to either an inadvertent, incorrect setting or a defect – KONSTANTERs are equipped with effective protective and self-monitoring functions.

Semiconductor Production and Processing



From the developmental phase to type testing, from burn-in and stress tests in production right on up to receiving inspection at the processing plants, semiconductors are subjected to numerous, frequently time-consuming tests.

Setup sequences which are run automatically by KONSTANTER devices make it possible to execute testing of this sort without elaborate control devices



SYSKON P SERIES

Single-Channel, Programmable Laboratory Power Supplies



SYSKON P series KONSTANTERs (SYSTEM KONSTANTER) are single-channel, programmable laboratory power supplies for demanding professional use in R&D, production and test systems.

FEATURES:

Digital interfaces: USB, RS232, GPIB (optional)

Analog interfaces: 2 trigger inputs, 3 signal outputs, control voltage inputs (5 V) for voltage and current, monitor voltage outputs (10 V) for voltage and current, sense terminals for auto-sensing operation at the power consumer

Display: 2 x 5-place LED display

Memory: 1700 memory locations for sequences
15 memory locations for basic settings

Power output: auto-ranging, unipolar

Sink: dynamic up to 195 W continuous power

FUNCTIONALITY:

- Output power: 500, 800, 1500, 3000 and 4500 W
- Very short response times [as of < 2 ms]
- Very high setting resolution [1 mV, 1 mA, 1 ms]
- High setting accuracy [as of 0.05 % + 30 mV]
- High measuring accuracy [as of 0.05 % + 30 mV]
- Extensive protective functions [overvoltage, overcurrent, overtemperature, limits]
- Flexible programmability [large memory module, import/export of stored sequences and settings]
- Power factor correction for sinusoidal current consumption
- Sensing terminals for auto-sensing operation at the power consumer
- Load resistance display
- Min-Max values display
- Master-slave connection (series and parallel connection)

CORE APPLICATIONS

- Testing of electrical and electronic components
- Execution of electrical test pulses, e.g. for automotive applications
- Execution of long-term testing
- Incorporation into test systems (with analog or digital control)
- Power supply for sensitive devices, e.g. laser controllers

SCOPE OF DELIVERY:

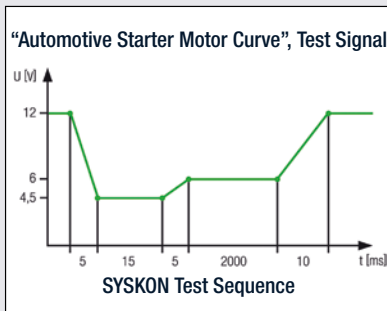
- CD-ROM with user and driver software, operating instructions (D + EN), data sheet (D + EN)
- Clear-cut user software (soft front-panel)
- Mains cable (P500, P800, P1500)
- USB cable (90° angle)
- Installation set for 19" rack mounting
- DAkkS calibration certificate

OPTIONAL ACCESSORIES:

- IEEE488 Interface (**K384A**)
- 3-phase mains power cable for SYSKON P3000 and P4500 (**K991B**)

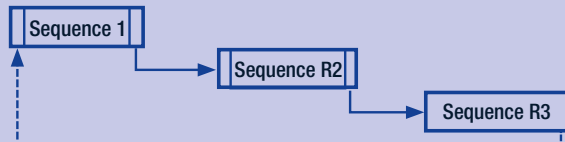
SYSKON Soft-Front Panel – PC user interface for SYSKON P series

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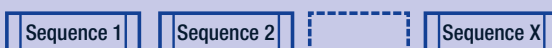


- **Sequence memory:**
1700 locations for sequence functions

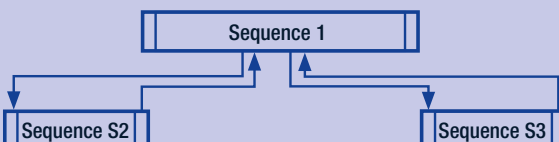
■ Sequence stringing



- **Setup memory:** 15 memory locations for complete configurations



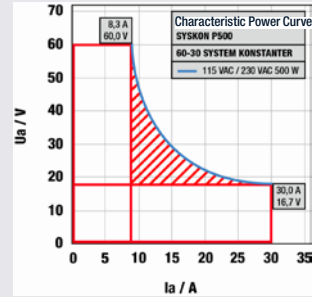
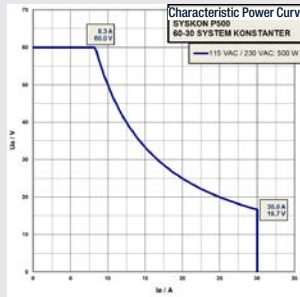
■ Invocation of sub-sequences from primary sequences





SYSKON | P500

500 W Output Power

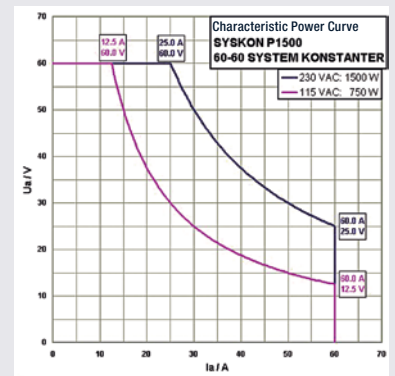
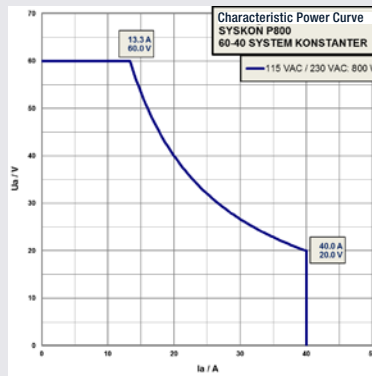


Auto-Range Curve
Relative to
Square Waves

SYSKON | P800

800 W Output Power

1500 W Output Power



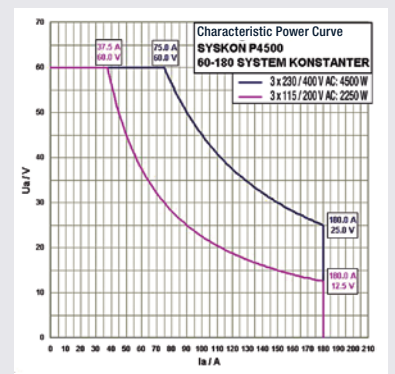
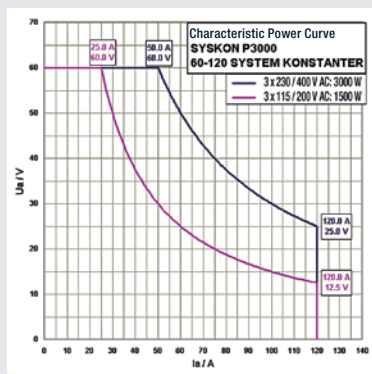
SYSKON | P1500



SYSKON | P3000

3000 W Output Power

4500 W Output Power



SYSKON | P4500



TECHNICAL DATA

Type	Article
SYSKON P500	K346A
SYSKON P800	K347A
SYSKON P1500	K353A
SYSKON P3000	K363A
SYSKON P4500	K364A
IEEE488 interface	K384A

Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. kg)
	P _{nom} [W]	U _{Set} [V]	I _{Set} [A]	Benchtop Instrument	19" Rack	
SYSKON P500	500	0 ... 60	0 ... 30	447 x 102 x 541	2 s.h.u.*) x 501	10
SYSKON P800	800	0 ... 60	0 ... 40	447 x 102 x 541	2 s.h.u.*) x 501	10
SYSKON P1500	1500	0 ... 60	0 ... 60	447 x 102 x 541	2 s.h.u.*) x 501	10
SYSKON P3000	3000	0 ... 60	0 ... 120	447 x 191 x 541	4 s.h.u.*) x 501	16
SYSKON P4500	4500	0 ... 60	0 ... 180	447 x 191 x 541	4 s.h.u.*) x 501	20

*) s.h.u. = standard height units

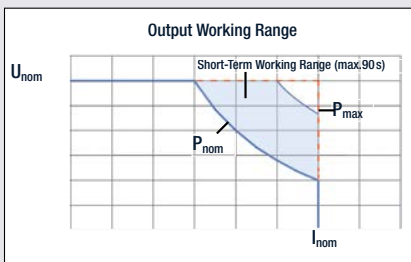


SSP / SLP 32N 120 ... 320

Single-Channel, Programmable Laboratory Power Supplies



SSP32N



SSP 32N-Models 120 W / 240 W



SSP 32N-Models 320 W



SLP32N

SSP 32N KONSTANTER 120, 240 and 320 devices (single output system power supplies) are single-channel programmable laboratory power supplies for universal use in R&D, production and testing.

BET circuit technology (bidirectional energy transformation) allows for rise and decay times of less than 1 ms almost entirely independent of load (< 4 ms with 80 V device).

FEATURES:

Analog interfaces: trigger input, signal outputs, control voltage inputs (5 V) for voltage and current, monitor voltage outputs (10 V) for voltage and current, sense terminals for auto-sensing operation at the power consumer

Display: 2 x 4-place LED display

Power output: auto-ranging + increased output power for brief intermittent periods

Sink: dynamisch bis zu 15 W

Memory: 242 Sequenzspeicherplätze, 10 Grundeinstellungsspeicherplätze (SSP 32N)

Digital interfaces: RS232, GPIB (optional SSP 32N)

SLP 32N KONSTANTERs are equipped with the same nominal output values and outstanding control characteristics as the SSP 32N series.

However, in this case the output parameters are set in the traditional manner with a ten-turn potentiometer.

But an analog interface for remote control and coupling purposes (also included with series SSP 32N devices) is included here as well

FUNCTIONALITY:

- Output power: 120 W, 240 W and 320 W
- Very short response times [as of 1 ms]
- High setting resolution [as of 5 mV, as of 1 mA]
- High setting accuracy [as of 0.15% + 30 mV]
- High measuring accuracy [as of 0.05% + 20 mV]
- Master-slave connection
- Extensive protective functions [overvoltage, current regulation, overtemperature, limit]
- Sensing terminals for auto-sensing operation at the power consumer
- Flexible programmability – large memory module, import/export of stored sequences – (SSP 32N)
- Min-Max values display (SSP 32N)

CORE APPLICATIONS:

- Testing of electrical and electronic components
- Execution of electrical test pulses (e.g. for automotive applications)
- Execution of long-term testing
- Incorporation into test systems

SCOPE OF DELIVERY:

- Mains power cable with earthing contact plug
- Operating Instructions

OPTIONAL ACCESSORIES:

- IEEE488 Interface (SSP32N) (K380A)
- Installation sets for 19" rack mounting (K990A), (K990B)
- Mains power cable for connecting two 32N devices (K991A)
- Factory calibration certificate

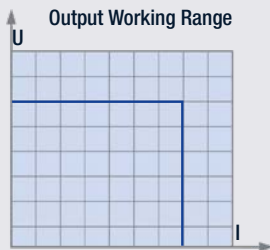
Software SSP Soft-Front Panel – PC user interface for SSP KONSTANTER

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Type	Article	Power		Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. kg)	
		P _{nom} [W]	P _{max} [W]	U _{nom} [V]	I _{nom} [A]	Benchtop Instrument	19" Rack		
SLP 120 W SSP 120 W	32 N 20 RU 10 P	K220A / K320A	120	200	0 ... 20	0 ... 10	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	2.9
	32 N 40 RU 6 P	K221A / K321A	120	240	0 ... 40	0 ... 6			
	32 N 80 RU 3 P	K222A / K322A	120	240	0 ... 80	0 ... 3			
SLP 240 W SSP 240 W	32 N 20 RU 20 P	K230A / K330A	240	320	0 ... 20	0 ... 20	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	2.9
	32 N 40 RU 12 P	K231A / K331A	240	360	0 ... 40	0 ... 12			
	32 N 80 RU 6 P	K232A / K332A	240	360	0 ... 80	0 ... 6			
SLP 320 W SSP 320 W	32 N 32 RU 18 P	K234A / K334A	320	430	0 ... 32	0 ... 18	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	3.4
IEEE488 interface for SSP 32N	K380A								0.1



LABKON P SERIES



Single-Channel, Computer Controlled Laboratory Power Supplies

LABKON P series devices (LABoratory KONstarter) offer convenient controls, a rugged design with minimal noise emission and high levels of accuracy.

The devices provide an ideal, reliable solution for many applications at the industrial level and for laboratory use.

FEATURES:

- CV and CC operating modes, automatic switching
- Several groups of parameters (device settings) can be saved and retrieved.
- Floating power output / no grounding
- Output can be switched on and off
- Supports SCPI (standard commands for programmable instruments)
- Protective devices, amongst others overvoltage protection
- Auto-sensing mode

- Benchtop instrument, also suitable for mounting to a 19" rack
- RS 232 port, optional GPIB and USB
- Calibration (adjustment) function

SCOPE OF DELIVERY:

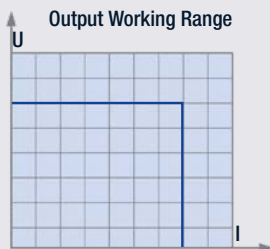
- Benchtop Instrument
- Rubber protector
- Mains cable (earthing contact)
- Safety precautions
- Operating instructions (German/English) on CD-ROM

OPTIONAL ACCESSORIES:

- IEEE488 interface (**K890A**)
- USB port (**K891A**)
- 19" installation set (**Z990A**)
- Factory calibration certificate

Type	Article	Power	Voltage	Current	Dimensions BxHxT (mm) Benchtop Instrument	Weight (approx. kg)	
		P _{nenn} [W]	U _{Set} [V]	I _{Set} [A]			
500W	LABKON P500 20/25	K147A	500	0 ... 20	0 ... 25	226x110x414 With rubber protector	5.5
	LABKON P500 35/14.5	K148A	500	0 ... 35	0 ... 14.5		
	LABKON P500 80/6.5	K149A	500	0 ... 80	0 ... 6.5		
	LABKON P500 120/4.2	K150A	500	0 ... 120	0 ... 4.2		
800 W	LABKON P800 20/40	K157A	800	0 ... 20	0 ... 40	213x104x391 Without rubber protector	5.5
	LABKON P800 35/22.5	K158A	800	0 ... 35	0 ... 22.5		
	LABKON P800 80/10	K159A	800	0 ... 80	0 ... 10		
	LABKON P800 120/6.5	K160A	800	0 ... 120	0 ... 6.5		

LSP 32K-KONSTANTER



Single-Channel, Computer Controlled Laboratory Power Supplies

Series LSP 32K KONSTANTERs (laboratory and system power supply) are linear controlled power supplies for use in R&D, production, service and training applications.

The devices are distinguished by outstanding ease of operation, excellent regulating accuracy and minimal residual ripple.

FEATURES:

- Process controlled
- Serial device interface
- Output can be switched on and off
- Voltage and current regulating
- Rotary encoder for adjusting U_{Set} and I_{Set}
- Adjustment is also possible with keys
- Multifunctional LCD panel

- Setup memory for 10 device settings
- Protective functions
- Benchtop instrument, suitable for mounting to a 19" rack

SCOPE OF DELIVERY:

- Mains power cable with earthing contact plug
- Operating instructions on CD-ROM

OPTIONAL ACCESSORIES:

- Interface adapter for USB (**K910B**)
- Interface adapter for RS 232 (**K910A**)
- Factory calibration certificate

Software Power Management System – PC user interface for LSP KONSTANTER 32K

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Type	Article	Power	Voltage	Current	Dimensions W x H x D (mm)		Weight (approx. kg)	
		P _{nenn} [W]	U _{Set} [V]	I _{Set} [A]	Benchtop Instrument	19" Rack		
LSP 32K	32 K 18 R 5	K110A	90	0 ... 18	0 ... 5	215x100x280	½19" x 2 standard height units x 243 + 45 mm	6.0
	32 K 36 R 3	K111A	108	0 ... 36	0 ... 3			
	32 K 72 R 1.5	K112A	108	0 ... 72	0 ... 1.5			



SPL SERIES

Single-Channel, Programmable Electronic Loads



Series SPL devices (single-channel programmable load) are programmable electronic loads with outstanding dynamic control characteristics. They're used for loading direct voltage/current sources with constant current, resistance, voltage or power in an adjustable fashion. Their range of applications includes static and dynamic testing of power packs, batteries, PV modules, fuel cells, inductances etc.

FEATURES:

- 4 operating modes: CC, CV, CR and CP
- Adjustable current edges: 0.1 mA to 4 A per μ s
- 3 transient functions
- The load can be activated as of an adjustable voltage level
- Short-circuit and battery discharging functions
- Sense terminal + trigger input
- Memory for 7 sequences with up to 50 steps each (at least 10 μ s per step)

- Low load voltage: < 0.6 V at max. current
- Load input on/off switching function
- Multifunctional, illuminated LCD panel
- Extensive protective functions: OV, OC, OP, OT, RV
- PC control via RS 232 port or optional IEEE 488 interface, or USB port
- SCPI command set

SCOPE OF DELIVERY:

- Mains power cable with earthing contact plug
- Operating instructions and SCPI Command Guide on CD-ROM
- Operating instructions and SCPI Command Guide on CD-ROM
- RS 232 cable

OPTIONAL ACCESSORIES:

- IEEE 488 interface (K890A)
- USB port (K891A)
- 19" installation set (Z990A)
- Factory calibration certificate

Type	Article	Power	Voltage	Current	Resistance	Dimensions W x H x D (mm)		Weight (approx. kg)
		P_{Set} [W]	U_{Set} [V]	I_{Set} [A]	R_{Set} [Ω]	Benchtop Device	19" Rack	
SPL 250-30	K852A	0.001 ... 250.00	0.001 ... 80.000	0.0001 ... 30.000	0.0200 ... 2000	226x110x414	½19" x 2 standard height units x 350 + 45 mm	5.8
SPL 400-40	K853A	0.001 ... 400.00	0.001 ... 80.000	0.0001 ... 40.000	0.0200 ... 2000			
SPL 200-20	K854A	0.001 ... 200.00	0.001 ... 200.00	0.0001 ... 20.000	0.0666 ... 6660			
SPL 350-30	K855A	0.001 ... 350.00	0.001 ... 200.00	0.0001 ... 30.000	0.0666 ... 6660			

SSL SERIES

Single-Channel, Programmable Electronic Loads



Series SSL devices (single-channel system load) are programmable electronic loads with a maximum sink power of 150 or 300 W. They're used for loading direct voltage sources with constant current, resistance or power in an adjustable fashion. Their range of applications includes testing power packs, batteries, PV modules, fuel cells etc.

FEATURES:

- 3 operating modes: CC, CR and CP
- Setting selected by means of rotary switch and keypad
- PC control via optional interface adapter
- High resolution measurement of U, I and P

- Multifunctional, illuminated LCD panel
- Memory for 10 setting values with time regulated sequence control (at least 1 second per step)
- Extensive protective functions: OV, OC, OP, OT, RV
- Load on/off switching function

SCOPE OF DELIVERY:

- Mains power cable with earthing contact plug
- Operating instructions on CD-ROM

OPTIONAL ACCESSORIES:

- Interface adapter for USB (K910B)
- Interface adapter for RS 232 (K910A)
- Factory calibration certificate

ELOAD Management System Software –
PC user interface for SSL electronic loads



Type	Article	Power	Voltage	Current	Resistance	Dimensions W x H x D (mm)		Weight (approx. kg)
		P_{Set} [W]	U_{Set} [V]	I_{Set} [A]	R_{Set} [Ω]	Benchtop Instrument	19" Rack	
32 EL 150 R 30	K850A	0.1 ... 150.0	0.001 ... 360.0	0.001 ... 30.00	0.01 ... 500.0	215x100x280	½19" x 2 s.h.u. x 243 + 45 mm	5.0
32 EL 300 R 30	K851A	0.1 ... 300.0	0.001 ... 360.0	0.001 ... 30.00	0.01 ... 500.0			



ACCESSORIES

Laboratory Power Supply

Type	Article	Designation	Usable for
Mounting kit	K990A	Mounting kit 1x32N for KONSTANTER SSP/SLP 32N	SSP 32N, SLP 32N
Mounting kit	K990B	Mounting kit 2x32N for KONSTANTER SSP/SLP 32N	SSP 32N, SLP 32N
Mounting kit	Z990A	Mounting kit for SPL and LABKON P series	SPL series, LABKON P series
Mains jumper cable	K991A	Mains jumper cable (AC loop-through cable), 0.4 m, for SLP32N and SSP32N	SSP 32N
Mains power cable	K991B	3-phase mains power cable, 3 m, for SSP64N and SYSKON	SSP 64N, SYSKON P3000 / P4500
RS232 cable	GTZ3241000 R0001	RS 232 interface cable, 2 m	SSP 32N, SYSKON, SPL, LABKON
RS232 adapter	K910A	Interface adapter, RS 232 / LSP, SSL	LSP 32K, SSL 32EL
USB adapter	K910B	Interface adapter, USB / LSP, SSL	LSP 32K, SSL 32EL
IEEE488 interface	K890A	Optional IEEE 488 interface for SPL and LABKON P series	SPL series, LABKON P series
USB interface	K891A	Optional USB port for SPL and LABKON P series	SPL series, LABKON P series
RS232 - USB converter	Z501L	Adapter cable for connecting instruments with an RS 232 port to the USB port at a PC	

SOFTWARE

Device Drivers, Soft Front-Panel, Management System

Software	SYSKON P	SSP 32N	LSP 32K	SSL 32EL	SPL
Device driver for NI LabVIEW	■	■	–	–	■
Device driver for NI LabWindows/CVI	■	■	–	–	–
Device driver for NI Agilent VEE	■	■	–	–	–
SYSKON Soft Front-Panel	■	–	–	–	–
SSP Soft Front-Panel	–	■	–	–	–
POWER Management System	–	–	■	–	–
ELOAD Management System	–	–	–	■	–

Please refer to our Test and Measurement Catalog or company website for a detailed description of the software features.

OEM POWER SUPPLIES

Panel Mount Power Supplies



OEM (Original Equipment Manufacturer) power supplies for special applications, or in accordance with customer specifications.

In addition to our standard power supply ranges (laboratory KONSTANTERs), we also fabricate power supplies for special applications, or in accordance with customer specifications, for example:

- Fixed voltage switched-mode power supplies as European plug-in module or in cartridge format
- 24 to 12V DC-DC converters for commercial vehicles
- Customer-specific power supplies

The photos show examples of our OEM power supplies.



OVERVIEW

Technical Specifications

Type	Article	Max. Power		Setting Range		Response Times (at nominal load)		Setting Resolution			Setting Accuracy		Settling Time for U with Sudden Load Variation 20 % ... 100 % I _{nom}	
		Durati- on [W]	<90 s [W]	U _{Set} [V]	I _{Set} [A]	0 V → U _{nom} (ms)	U _{nom} → 1 V (ms)	U _{Set} (mV)	I _{Set} (mA)	t _{Set} (ms)	U _{Set} ± (%+mV)	I _{Set} ± (%+mA)	Tolerance (mV)	Time (ms)
Programmable Laboratory Power Supplies														
SYSKON P500-60-30	K346A	500	–	0...60	0... 30	2	20	1	1	1	0.05+30	0.05+ 90	120	0.6
SYSKON P800-60-40	K347A	800	–	0...60	0... 40	2	15	1	1	1	0.05+30	0.05+ 90	120	0.5
SYSKON P1500-60-60	K353A	1500	–	0...60	0... 60	2	11	1	1	1	0.05+30	0.05+ 90	120	0.4
SYSKON P3000-60-120	K363A	3000	–	0...60	0...120	15	11	1	1	1	0.07+48	0.10+135	120	1.2
SYSKON P4500-60-180	K364A	4500	–	0...60	0...180	19	11	1	1	1	0.10+48	0.15+180	120	1.6
SSP 32 N 20 RU 10 P	K320A	120	(200)	0...20	0...10	1	1	5	2.5	10	0.15+30	0.4+35	40	0.2
SLP 32 N 20 R 10	K220A									–				
SSP 32 N 40 RU 6 P	K321A	120	(240)	0...40	0...6	1	1	10	2	10	0.15+40	0.5+20	80	0.2
SLP 32 N 40 R 6	K221A									–				
SSP 32 N 80 RU 3 P	K322A	120	(240)	0...80	0...3	4	4	20	1	10	0.15+80	0.5+10	160	0.2
SLP 32 N 80 R 3	K222A									–				
SSP 32 N 20 RU 20 P	K330A	240	(320)	0...20	0...20	1	1	5	5	10	0.15+40	0.5+70	40	0.6
SLP 32 N 20 R 20	K230A									–				
SSP 32 N 40 RU 12 P	K331A	240	(360)	0...40	0...12	1	1	10	3.33	10	0.15+45	0.5+45	80	0.3
SLP 32 N 40 R 12	K231A									–				
SSP 32 N 80 RU 6 P	K332A	240	(360)	0...80	0...6	4	4	20	2	10	0.15+80	0.5+25	160	0.2
SLP 32 N 80 R 6	K232A									–				
SSP 32 N 32 RU 18 P	K334A	320	(430)	0...32	0...18	1	1	10	5	10	0.15+50	0.5+70	64	0.5
SLP 32 N 32 R 18	K234A									–				
LABKON P500 20/25	K147A	500	–	0...20	0...25	50	50	1	1	–	0.03+5	0.5+8	n.a.	n.a.
LABKON P500 35/14.5	K148A	500	–	0...35	0...14.5	50	50	1	1	–	0.15+5	0.5+6	n.a.	n.a.
LABKON P500 80/6.5	K149A	500	–	0...80	0...6.5	50	50	1	1	–	0.03+10	0.5+3	n.a.	n.a.
LABKON P500 120/4.2	K150A	500	–	0...120	0...4.2	60	60	as of 1	1	–	0.03+15	0.5+10	n.a.	n.a.
LABKON P800 20/40	K157A	800	–	0...20	0...40	50	50	1	1	–	0.03+5	0.5+15	n.a.	n.a.
LABKON P800 35/22.5	K158A	800	–	0...35	0...22.5	50	50	1	1	–	0.03+8	0.5+6	n.a.	n.a.
LABKON P800 80/10	K159A	800	–	0...80	0...10	50	50	1	1	–	0.03+10	0.5+5	n.a.	n.a.
LABKON P800 120/6.5	K160A	800	–	0...120	0...6.5	60	60	as of 1	1	–	0.03+15	0.5+12	n.a.	n.a.
LSP 32 K 18 R 5	K110A	90	–	0...18	0...5	200	1500	10	1	–	0.1+20	0.2+20	70	50
LSP 32 K 36 R 3	K111A	108	–	0...36	0...3	200	1500	10	1	–	0.1+20	0.2+20	70	50
LSP 32 K 72 R 1.5	K112A	108	–	0...72	0...1.5	200	3000	20	1	–	0.1+20	0.2+20	70	50

■ Standard equipment ◆ Optional



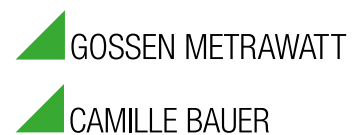
OVERVIEW

Technical Specifications

Residual Ripple		Interfaces				Programmable Sequences	Number of Basic Setting Memory Locations	Number of Sequence Memory Locations	Sink Mode	Overvoltage Protection	Overcurrent Protection	Auto-Ranging Output	Output On/Off	Front Panel Output	Rear Panel Output	Sense Terminals	SELV (safety extra-low voltage)
U [mV _{TRMS}]	I [mA _{TRMS}]	Analog	RS 232	USB	IEEE 488												
6	50	■	■	■	◆	■	15	1700	dyn	■	■	■	■	-	■	■	-
6	50	■	■	■	◆	■	15	1700	dyn	■	■	■	■	-	■	■	-
6	50	■	■	■	◆	■	15	1700	dyn	■	■	■	■	-	■	■	-
10	70	■	■	■	◆	■	15	1700	dyn	■	■	■	■	-	■	■	-
15	100	■	■	■	◆	■	15	1700	dyn	■	■	■	■	-	■	■	-
10	25	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	■
10	20	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	■
10	10	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	-
15	50	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	■
15	25	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	■
15	20	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	-
30	50	■	■	-	◆	■	10	242	dyn	■	■	■	■	■	■	■	■
3	10	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	■
5	8	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	■
8	6	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	-
15	6	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	-
10	20	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	■
10	8	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	■
16	6	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	-
16	10	-	■	◆	◆	-	10	-	-	■	■	-	■	■	-	■	-
2	5	-	◆	◆	-	-	-	-	-	■	■	-	■	■	-	-	■
2	4	-	◆	◆	-	-	-	-	-	■	■	-	■	■	-	-	■
2	3	-	◆	◆	-	-	-	-	-	■	■	-	■	■	-	-	-

■ Standard equipment ◆ Optional

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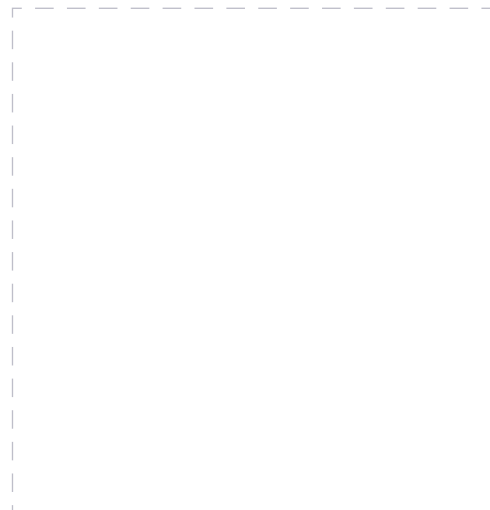
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