

Electronic Load ESL-M



Constant current and resistance regulation
Voltages 60 - 500 Vdc • Currents 1 - 1000 A • Power from 100 - 20000W



*ESL 2000 with adjustable under voltage cut off
case 19", 6U*

The Electronic Load for Laboratory and System Applications

- R- and C-constant !
- DC Voltage up to 500 Vdc
- DC Currents up to 1000 A
- Powers up to 20 kW
- Pre-setting functions
- Up to 500 W also deliverable as 3 U/42TE Euro cassette
- Option USB, RS 232, IEEE 488 or Analogue Interface



ESL 10000-C1000-A , Case 19", 18U with 1000A output



*ESL 500-AKF
Case 235x135x435mm*

The electronic load ESL is one of the most modern version of the outdated sliding resistor. The modes of operation current- and resistance constant guarantee continuously and electronically controlled load of an output on a supply mains, an electric circuit, a battery etc.. The LCD display shows all set and measure values.

Optionally the programming and measuring may follow via the USB, RS232, IEEE488 or analogue interface.

Short specification ESL

Type	Power W	Voltage Vdc*	Current Adc*	Case
ESL-100	100 W	1...60 Vdc	0.....20 A	235x135x435mm
ESL-250	250 W	1...60 Vdc	0.....30 A	235x135x435mm
ESL-500	500 W	1...60 Vdc	0.....50 A	235x135x435mm
ESL-750	750 W	1...60 Vdc	0.....75 A	19", 3U,490mm
ESL-1000	1000 W	1...60 Vdc	0....100 A	19", 3U,490mm
ESL-1500	1500 W	1...60 Vdc	0....125 A	19", 3U,490mm
ESL-2000	2000 W	1...60 Vdc	0....150 A	19", 6U,540mm
ESL-3000	3000 W	1...60 Vdc	0....200 A	19", 6U,540mm
ESL-4000	4000 W	1...60 Vdc	0....250 A	19", 9U,600mm
ESL-5000	5000 W	1...60 Vdc	0....300 A	19", 9U,600mm
ESL-6000	6000 W	1...60 Vdc	0....350 A	19", 12U,600mm
ESL-7000	7000 W	1...60 Vdc	0....400 A	19", 12U,600mm
ESL-8000	8000 W	1...60 Vdc	0....500 A	19", 15U,600mm
ESL-9000	9000 W	1...60 Vdc	0....550 A	19", 15U,600mm
ESL-10000	10000 W	1...60 Vdc	0....600 A	19", 15U,600mm
ESL-12000	12000 W	1...60 Vdc	0....700 A	19", 18U,600mm
ESL-14000	14000 W	1...60 Vdc	0....800 A	19", 21U,600mm
ESL-16000	16000 W	1...60 Vdc	0....900 A	19", 24U,600mm
ESL-18000	18000 W	1...60 Vdc	0..1000 A	19", 27U,600mm
ESL-20000	20000 W	1...60 Vdc	0..1000 A	19", 30U,600mm

* Please choose higher voltages with option -V and smaller currents with option -C

Short specification options ESL

Option	Description
-ENC	Without operation and indication (only with Option -A,-RS232,-USB or IEEE)
-Cxxx	Customer specific current < standard value (minimum 1A)
-V100	Voltage 1...100 V CmaxNew = Cmax -50%
-V250	Voltage 1...250 V CmaxNew = Cmax -75%
-V500	Voltage 1...500 V CmaxNew = Cmax -90%
-IEEE	IEEE 488 Interface, Programming and measurement
-RS232	RS232 Interface, Programming and measurement
-IEEE+RS232	IEEE488 und RS232 Interface, Programming and measurement
-NZ	19" case for ESL-100-500
-A	Analogue Interface (0...5 Vdc, TTL), Programming and measurement
-AG	Analogue Interface as -A with galvanic isolation for 0...5 signals
-EK	Euro cassette 3U, 42 TE, 430 mm (only with option -ENC up to 500 W)
-OL	Without 19" holders (only von ESL-750 to ESL-3000)
-KR	Build in short circuit relays
-USB	USB Interface, Programming and measurement
-EUAB	Adjustable under voltage cut off
-AKF	Safety output connectors on the front side (only up to 20A)

FURTHER INFORMATION

Description page 34
Technical specification page 35

EAQ

AC
SOURCES

EDQ

DC
SOURCES

ExL

ELECTRONIC
LOADS

EST

SAFETY TEST
UNITS

ERS

RELAY
SCANNER

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TEST SYSTEMS

Unit Description ESL-M



- LCD display :** The electronic load ESL has a big LCD display. Set values and measure values are indicated at the same time.
- Adjustments :** The settings of current A can be reached through a potentiometer.
- Operating Mode :** The load operates in the constant-resistance as well as in the constant-current mode.
- Interfaces :** The interfaces USB, RS 23, IEEE 488 and the analogue interface are optionally available.
All settings and measurements can be carried out with the interfaces. The resolution for programming and measuring is 12 bit.
- Power Outlet :** The output of the load is always on the backside of the unit and is carried out as screw terminal up to 300A and > 300A as an sopper rail . As an option there is an additional output on the front panel carried out as a safety pole terminal. The measurement of the output voltage (Sense) is at separate outputs on the back of the unit.
- Maximum Current :** The maximum adjustable current emerges from the order table. If a lower maximum current is needed due to a better resolution, this can simply be chosen with the option -C i.e. ESL-100-C5 -Now the load has got a maximum current of 5 Ampere with the option -C5 instead of a maximum current of 20 Ampere.
- Higher Voltage :** With the option V100 up to V500 the input voltage of the load can be increased. Attention has to be paid to the fact that through increasing the voltage, the maximum current is reduced (for current reduction see option table). ESL-1000-V250 for example has now got an input voltage of 1...250 Vdc and a current of 0...25 A. The power of 1000 W remains.



Back side
ESL 500-USB
Case 235x135x435mm

High Power!

*The picture shows the Electronic load:
ESL-20000 -USB-EUAB-FR
with an power of 20000W*

*Case dimensions: Rack with
weehls, B=600mm,
H=1530mm, D=600mm*



Specification ESL



Type	ESL-100	ESL-250	ESL-500	ESL-750	ESL-1000
Output Data					
Power max.	100 W	250 W	500 W	750 W	1000 W
Input voltage	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	0 – 60 VDC
Current	0 – 20 ADC	0 – 30 ADC	0 – 50 ADC	0 – 75 ADC	0 – 100 ADC
Current Rise Time max. ms	1	1	1	1	1
Programming Accuracy					
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Measurement					
Voltage	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Mains Input					
Line Input -10%/+15%	230VAC	230VAC	230VAC	230VAC	230VAC
Line Input ±10% (Option -Z)	115VAC	115VAC	115VAC	115VAC	115VAC
Input Frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Isolation voltage	2000Veff	2000Veff	2000Veff	2000Veff	2000Veff
Type	ESL-1500	ESL-2000	ESL-3000	ESL-4000	ESL-5000
Output Data					
Power max.	1500 W	2000 W	3000 W	4000 W	5000 W
Input voltage	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	0 – 60 VDC
Current	0 – 125 ADC	0 – 150 ADC	0 – 200 ADC	0 – 250 ADC	0 – 300 ADC
Current Rise Time max. ms	1	1	1	1	1
Programming Accuracy					
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Measurement					
Voltage	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Mains Input					
Line Input -10%/+15%	230VAC	230VAC	230VAC	230VAC	230VAC
Line Input ±10% (Option -Z)	115VAC	115VAC	115VAC	115VAC	115VAC
Input Frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Isolation voltage	2000Veff	2000Veff	2000Veff	2000Veff	2000Veff
Type	ESL-6000	ESL-7000	ESL-8000	ESL-9000	ESL-10000
Output Data					
Power max.	6000 W	7000 W	8000 W	9000 W	10000 W
Input voltage	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	0 – 60 VDC
Current	0 – 350 ADC	0 – 400 ADC	0 – 450 ADC	0 – 550 ADC	0 – 600 ADC
Current Rise Time max. ms	1	1	1	1	1
Programming Accuracy					
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Measurement					
Voltage	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Mains Input					
Line Input -10%/+15%	230VAC	230VAC	230VAC	230VAC	230VAC
Line Input ±10% (Option -Z)	115VAC	115VAC	115VAC	115VAC	115VAC
Input Frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Isolation voltage	2000Veff	2000Veff	2000Veff	2000Veff	2000Veff
Type	ESL-12000	ESL-14000	ESL-16000	ESL-18000	ESL-20000
Output Data					
Power max.	12000 W	14000 W	16000 W	18000 W	20000 W
Input voltage	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	1 – 60 VDC	0 – 60 VDC
Current	0 – 700 ADC	0 – 800 ADC	0 – 900 ADC	0 – 1000 ADC	0 – 1000 ADC
Current Rise Time max. ms	1	1	1	1	1
Programming Accuracy					
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Measurement					
Voltage	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Current	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
Mains Input					
Line Input -10%/+15%	230VAC	230VAC	230VAC	230VAC	230VAC
Line Input ±10% (Option -Z)	115VAC	115VAC	115VAC	115VAC	115VAC
Input Frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Isolation voltage	2000Veff	2000Veff	2000Veff	2000Veff	2000Veff

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