

# Electronic DC Load

**EL500, EL1000 Series**  
**Power 500 W and 1000 W**  
**Cooled by int. fans**



short time  
overload  
on request

Constant I-Mode, U-Mode,  
 P-Mode or G-Mode  
 All Modes ext. programmable  
 Nominal value indication and offline setting  
 of all Modes  
 Auto change to true values  
 Overload possible for a short time  
 Stand-alone use and intended for 19" rack



Options a.o.:  
 Installed IEEE488.2 (GPIB) / RS232\* / USB\*  
 interface with Lab-View Driver (Series INT2E)  
 Installed USB Interface with driver software  
 External CAN Open Interface (on request)  
 \*selectable RS232 or USB

**Input:**  
 Input voltage 230 V<sub>AC</sub> ±10%, 50 - 60 Hz  
 Load voltage see table  
 Load current see table  
 Power see table

**Regulation:**  
 Set point accuracy ≤ 0,1% I<sub>max</sub>, U<sub>max</sub>  
 (Voltage range ± 20%) ≤ 1% G<sub>max</sub>, P<sub>max</sub>  
 Rise time (at I-Mode, 10– < 10 μs  
 90 % nominal value change)  
 Transient time (at I-Mode 10– < 200 μs  
 90% nominal value change)  
 Temperature coefficient ≤ 0,1% / K I<sub>max</sub>  
 (after 15 min. working time, within 8 hours  
 const. ambient temp. and  
 const. input voltage)

**Protection:**  
 Overload protection min. 2-times, normal load for a  
 short period  
 Overvoltage protection power shutdown U<sub>Lmax</sub> + 5 %  
 Thermal protection power shutdown,  
 manual reset  
 Overcurrent current limit I<sub>max</sub> + 20 %  
 Safety for load circuit  
 Reverse polarity protection fuse and wattless current diode

**Environmental Conditions:**  
 Operating temperature 0 – +35°C  
 Cooling int. fan, temperature controlled

**Safety:**  
 Safety standard EN 61010-1  
 Isolation  
 AC input - load input: U<sub>L</sub> ≤ 350 V: 2,3 kV<sub>eff</sub>  
 U<sub>L</sub> > 350 V – 800 V: 3,7 kV<sub>eff</sub>  
 1,35 kV<sub>eff</sub>  
 AC input - ground: U<sub>L</sub> ≤ 150 V: 500 V<sub>eff</sub>  
 U<sub>L</sub> > 150 – 300 V: 820 V<sub>eff</sub>  
 U<sub>L</sub> > 300 – 600 V: 1,35 kV<sub>eff</sub>  
 U<sub>L</sub> > 600 – 800 V: 2,2 kV<sub>eff</sub>

**EMC:**  
 Input EMI filter EN61000-6-3  
 Input immunity EN61000-6-1

**Operation and Control:**

Manual adjust: Adjustment current, voltage, power and conductance (see table): each 2 levels (max., min.) each over 2 channels adjustable selectable I-Mode 20/100%, G-Mode 5-100%  
 Pulse-generator I, U, P, G 100 Hz or 1 kHz switch-selected, waveform: square-wave 1 : 1 ext. voltage (reference - U<sub>L</sub>)  
 Programming 0 – 10 V ≙ 0 – I<sub>max</sub>  
 0 – 10 V ≙ 0 – U<sub>max</sub>  
 0 – 10 V ≙ 0 – P<sub>max</sub>  
 0 – 10 V ≙ 0 – G<sub>max</sub>  
 any waveform, frequency range 0-30 kHz typical (-3 dB)  
 Parallel operation same units  
 Monitor Signals current-, voltage-, power- and conductance-monitor, signal undervoltage, sum alarm signals for overcurrent, temp. limit, overload or overvoltage  
 Indication overcurrent, temp. limit, overload, over- and undervoltage each 1 LED for voltage, current/conductance and power  
 Instruments LED digital 3½ dig., accuracy 0,2% ± 1d

**Connectors:**

Input Euro - plug rear side with switch front side  
 Load I<sub>L</sub> ≤ 25 A: female plug 4 mm  
 I<sub>L</sub> > 25 A: female plug 6 mm lockable  
 I<sub>L</sub> ≥ 100 A: typ DIX SE50 rear side female plug included  
 Sense ≤ 50A, female plug 4mm (with feet) (19", 3U)  
 > 50A, female plug 4mm front and rear panel  
 Ext. programming 25 pole Sub D female plug

**Physical Specifications:**

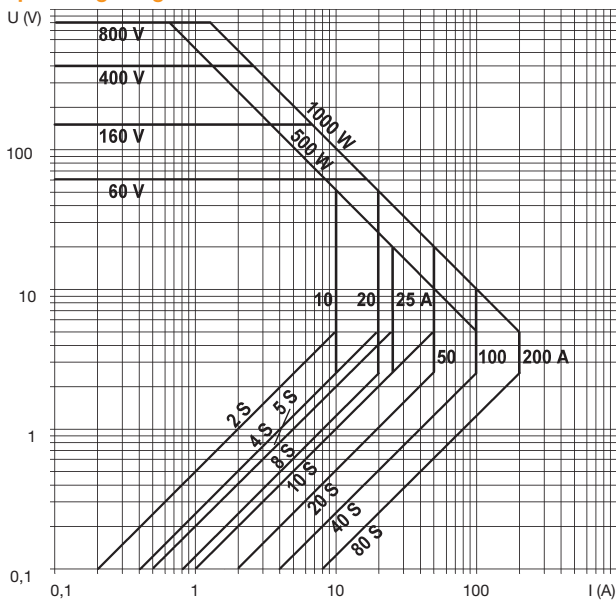
Dimensions wxhxd 485 x 155 x 400 mm (with feet) (19", 3U)  
 Weight EL500: approx 10 kg  
 EL1000: approx 13 kg

Units for Laboratory and Test

Power (W)	Load voltage (V)	Load current (A)	Load current in the operating range from 0,1 V to 2,5 V (A)		Conductance max. (S)	Model Number
			(A)	(A)		
500	2,5 - 60	0,01 - 10	0,4	10	4	EL500/60/10
500	2,5 - 60	0,01 - 25	1	25	10	EL500/60/25
500	2,5 - 60	0,01 - 50	2	50	20	EL500/60/50
500	2,5 - 60	0,01 - 100	4	100	40	EL500/60/100
500	2,5 - 160	0,01 - 10	0,4	10	4	EL500/160/10
500	2,5 - 160	0,01 - 25	1	25	10	EL500/160/25
500	2,5 - 160	0,01 - 50	2	50	20	EL500/160/50
500	2,5 - 400	0,01 - 10	0,4	10	4	EL500/400/10
500	5 - 400	0,01 - 25	0,5	25*	5	EL500/400/25
500	5 - 800	0,01 - 10	0,2	10*	2	EL500/800/10
1000	2,5 - 20	0,01 - 100	0,4	100	40	EL1000/20/100
1000	2,5 - 60	0,01 - 20	0,8	25	8	EL1000/60/20
1000	2,5 - 60	0,01 - 50	2	50	20	EL1000/60/50
1000	2,5 - 60	0,01 - 100	4	100	40	EL1000/60/100
1000	2,5 - 60	0,01 - 200	8	200	80	EL1000/60/200
1000	2,5 - 160	0,01 - 20	0,8	20	8	EL1000/160/20
1000	2,5 - 160	0,01 - 50	2	50	20	EL1000/160/50
1000	2,5 - 160	0,01 - 100	4	100	40	EL1000/160/100
1000	2,5 - 400	0,01 - 20	0,8	20	8	EL1000/400/20
1000	5 - 400	0,01 - 50	1	50*	10	EL1000/400/50
1000	5 - 800	0,01 - 20	0,4	20*	4	EL1000/800/20

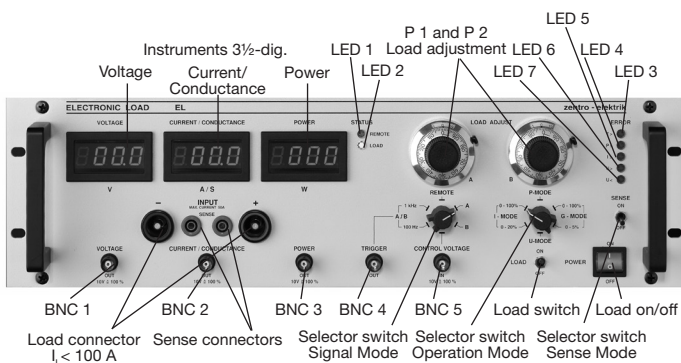
\* up to 5 V

**Operating range:**



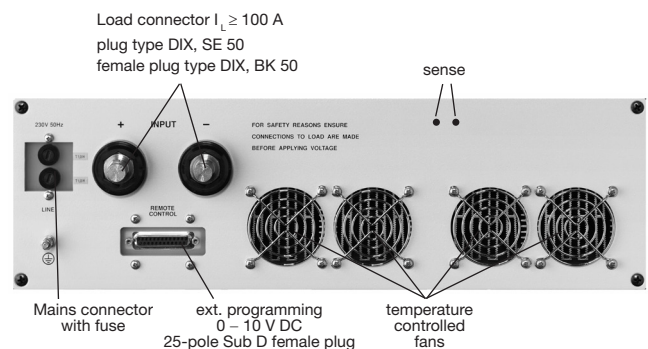
**Option:**

- Autorange current-/voltage-const.
- Installed IEEE 488.2 Interface
- Euro-Card INT2E
- Cutt-off regulation (application: battery charging, dynamo / generator test)
- Additional input to modulate upon ( application: impedance measurements for fuel cells)
- Additional sense-jack on the rear panel
- Input voltage 115VAC ±10%
- USB Interface
- CAN Interface (together with RS232)



**Front View**

Signals:  
 BNC 1: Output true value load voltage  
 BNC 2: Output true value load current/ -conductance  
 BNC 3: Output true value load power  
 BNC 4: Output trigger  
 BNC 5: Input control voltage



**Back View: load current > 50A**

Indication:  
 LED 1: Remote on/off  
 LED 2: Load on  
 LED 3: Temperature limit  
 LED 4: Max. power  
 LED 5: Max. load current  
 LED 6: Max. load voltage  
 LED 7: Min. load voltage