

# Electronic DC Load

## EL10000, EL20000 Series Power 10000 W and 20000 W Cooled by cooling liquid



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  
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<sub>AC</sub> V ±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 (10 - 90% nominal value change) typ. 100 μs  
Temperature coefficient ≤ 0,1 % /K I<sub>max</sub>  
(after 15 min. working time, const. ambient temp. and const. input voltage) within 8 hours

**Protection:**  
Overload protection power limit P<sub>max</sub> + 5 %  
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 and fuse and wattless current diode  
reverse polarity protection for I<sub>L</sub> ≤ 400 A

**Environmental Conditions:**  
Humidity max. 70 %, non condensing  
Operating temperature +15°C - +35°C  
Cooling cooling liquid, temp. controlled  
Coolant pressure 3 bar ≤ P ≤ 6 bar  
Coolant temperature +12°C ≤ θ ≤ +20°C

**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>  
AC input - ground: 1,35 kV<sub>eff</sub>  
Load 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>)  
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 - 5 kHz (-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 LED digital 3½ dig., accuracy 0,2% ± 1d  
  
Instruments  
  
**Connectors:**  
Input Euro - plug rear side with switch front side  
Load type DIX SE50 female plug included I<sub>L</sub> ≥ 250 A contact rail each pole 2 x M10  
Ext. programming 25 pole Sub D female plug  
Coolant R 3/4 AG

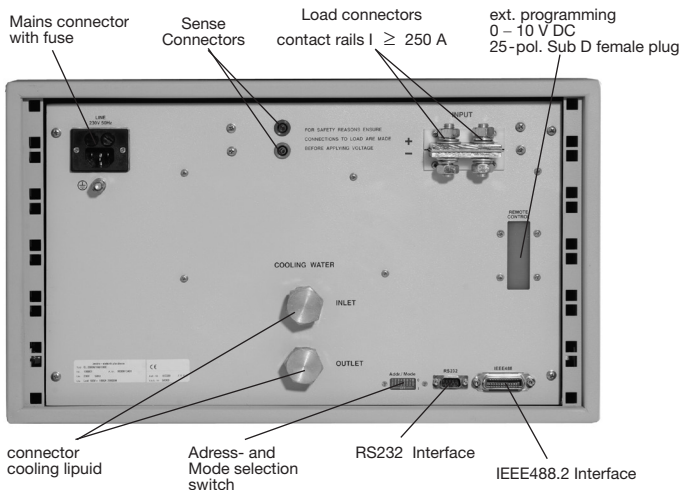
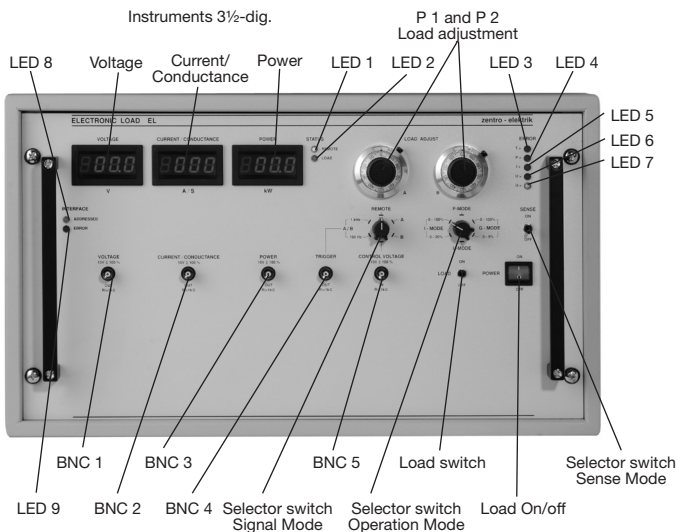
### Physical Specifications:

Dimensions 520 x 305 x 760 mm  
w x h x d  
Weight EL10000: ca. 45 kg  
EL20000: ca. 65 kg

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
10000	2,5 - 60	0,01 - 200	8	200	80	EL10000/60/200*
10000	2,5 - 60	0,01 - 500	20	500	200	EL10000/60/500
10000	2,5 - 60	0,01 - 1000	40	1000	400	EL10000/60/1000*
10000	2,5 - 160	0,01 - 100	4	100	40	EL10000/160/100*
10000	2,5 - 160	0,01 - 200	8	200	80	EL10000/160/200
10000	2,5 - 160	0,01 - 500	20	500	200	EL10000/160/500
10000	2,5 - 160	0,01 - 1000	40	1000	400	EL10000/160/1000*
10000	2,5 - 400	0,01 - 100	4	100	40	EL10000/400/100*
10000	2,5 - 400	0,01 - 200	8	200	80	EL10000/400/200*
10000	2,5 - 800	0,01 - 100	4	100	40	EL10000/800/100
10000	2,5 - 800	0,01 - 200	8	200	80	EL10000/800/200
20000	2,5 - 60	0,01 - 400	16	400	160	EL20000/60/400*
20000	2,5 - 60	0,01 - 1000	40	1000	400	EL20000/60/1000*
20000	2,5 - 160	0,01 - 200	8	200	80	EL20000/160/200*
20000	2,5 - 160	0,01 - 400	16	400	160	EL20000/160/400
20000	2,5 - 160	0,01 - 1000	40	1000	400	EL20000/160/1000
20000	2,5 - 400	0,01 - 100	4	100	40	EL20000/400/100*
20000	2,5 - 400	0,01 - 200	8	200	80	EL20000/400/200*
20000	2,5 - 400	0,01 - 400	16	400	160	EL20000/400/400*
20000	2,5 - 800	0,01 - 100	4	100	40	EL20000/800/100*
20000	2,5 - 800	0,01 - 200	8	200	80	EL20000/800/200*
20000	2,5 - 800	0,01 - 400	16	400	160	EL20000/800/400

\* please contact factory

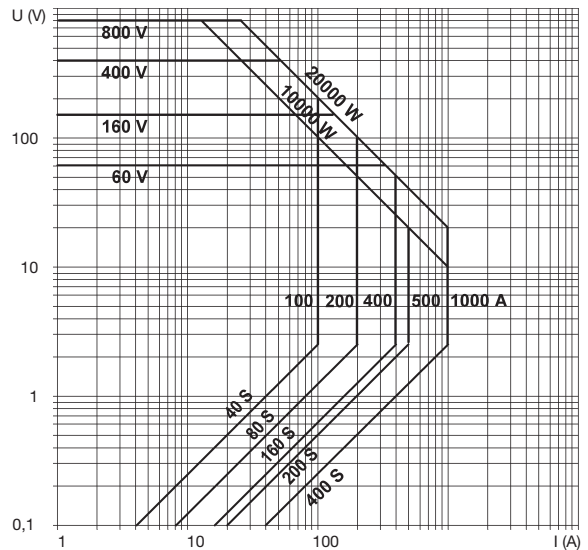
Front view/Back view:



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)
- Input voltage 115VAC ±10%
- USB Interface
- CAN Interface (together with RS232)

Operating range:



- 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
  - LED 8: relocated
  - LED 9: Error

- 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