

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_{AC} V ±10%, 50 - 60 Hz

Load voltage see table
Load current see table
Power see table

Regulation:
Set point accuracy ≤ 0,1 % I_{max}, U_{max}
(Voltage range ± 20%) ≤ 1% G_{max}, P_{max}
Rise time (10 - 90% nominal value change) typ. 100 μs
Temperature coefficient ≤ 0,1 % /K I_{max}
after 15 min. working time, within 8 hours
const. ambient temp. and const. input voltage)

Protection:
Overload protection power limit P_{max} + 5 %
Overvoltage protection power shutdown U_{Lmax} + 5 %
Thermal protection power shutdown, manual reset
Overcurrent current limit I_{max} + 20%
Safety for load circuit and fuse and wattless current diode
reverse polarity protection for I_L ≤ 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_L ≤ 350 V: 2,3 kV_{eff}
U_L > 350 V - 800 V: 3,7 kV_{eff}
AC input - ground: 1,35 kV_{eff}
Load input - ground: U_L ≤ 150 V: 500 V_{eff}
U_L > 150 - 300 V: 820 V_{eff}
U_L > 300 - 600 V: 1,35 kV_{eff}
U_L > 600 - 800 V: 2,2 kV_{eff}

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

Operation and Control:

Manual adjust:
Adjustment

Pulse-generator I, U, P, G

Programming

Parallel operation
Monitor Signals

Indication

Instruments

Connectors:

Input

Load

Ext. programming
Coolant

Physical Specifications:

Dimensions
w x h x d
Weight

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%
100 Hz or 1 kHz switch-selected,
waveform: square-wave 1 : 1
ext. voltage (reference - U_L)
0 - 10 V ≙ 0 - I_{max}
0 - 10 V ≙ 0 - U_{max}
0 - 10 V ≙ 0 - P_{max}
0 - 10 V ≙ 0 - G_{max}
any waveform, frequency
range 0 - 5 kHz (-3 dB)
same units
current-, voltage-, power- and
conductance-monitor,
signal undervoltage,
sum alarm signals for overcurrent,
temp. limit, overload or
undervoltage
overcurrent, temp. limit,
overload, over- and undervoltage
each 1 LED
LED digital for voltage,
current/conductance and power
3½ dig., accuracy 0,2% ± 1d

Euro - plug rear side
with switch front side
type DIX SE50
female plug included
I_L ≥ 250 A contact rail
each pole 2 x M10
25 pole Sub D female plug
R 3/4 AG

520 x 305 x 760 mm

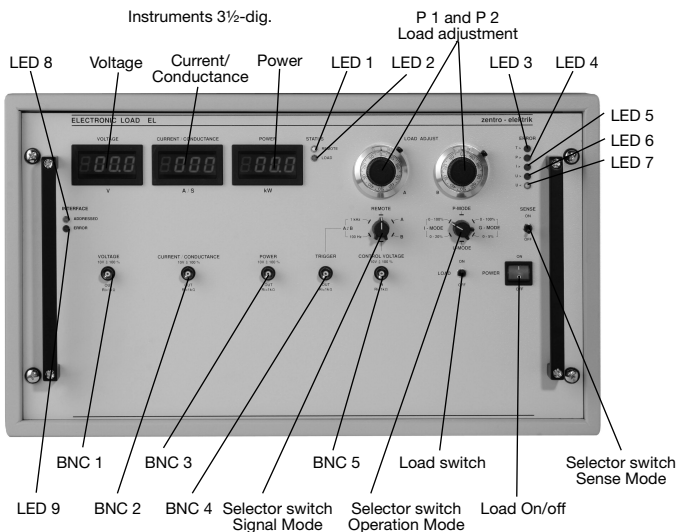
EL10000: ca. 45 kg
EL20000: ca. 65 kg

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

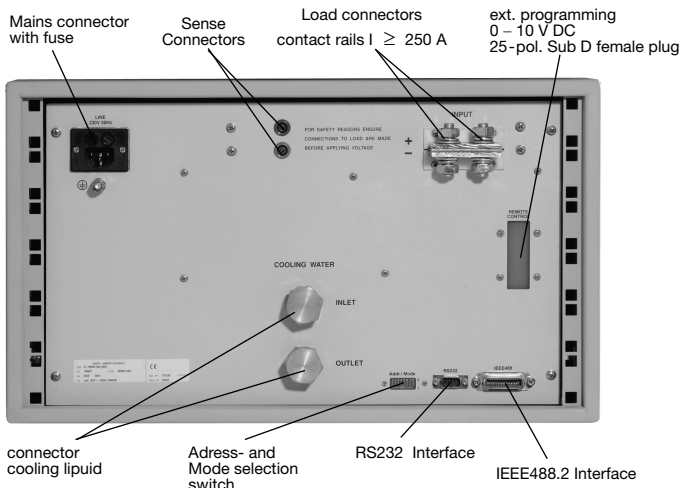
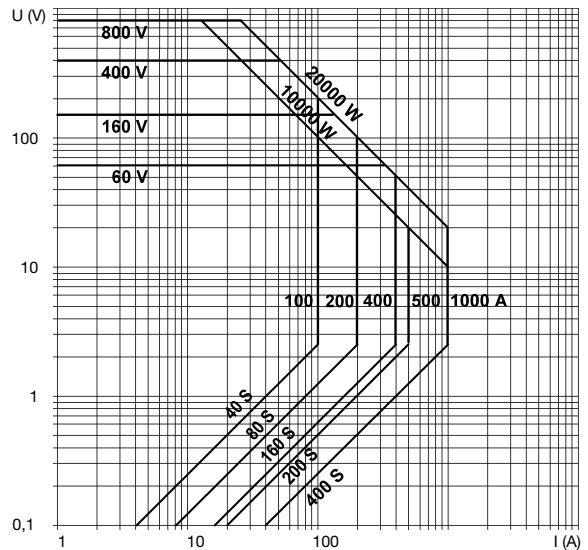
Option:

- 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

Front view/Back view:



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