

Electronic DC Load

Series ELA Power 250 Watt

Constant I-Mode or R-Mode
Master-Slave Mode

ext. programmable I-constant, without a G-Module installed
ext. programmable I-,U-,P- or G- constant with a G-Module installed

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)
G- Module
Front-End Unit
*selectable RS232 or USB



The Series ELA 250 load are electronic regulated DC loads with power up to 250Watt. It is designed at the latest MOS technologie with a DC load range starting at 0.35VDC up to 160VDC. Everywhere, DC loads are needed as a stand alone type or integrated via interface in any system applications, the ELA 250 series offers most intelligent features such as:
Minimum load voltage 0.35VDC / Load ON/OFF / Remote Control Port (RCP) with additional +15VDC voltage to supply external components / Local-Lockout / U- and I-Monitor outputs buffered / Load-On-Relay at Power-Up / a.m.m.

Input:

Input voltage 230VAC -10% +6%, 50-60Hz
Load voltage see table
Load current see table
Continuous Power see table

Regulation:

Set point accuracy $\leq 0,1\% I_{max}$
(Voltage change $\pm 20\%$)
Rise time (at 10-90% nominal value change I-Mode)
ELA250/75/20, ELA250/75/40 $U_L > 3V \leq 60\mu s$
 $U_L < 3V \leq 400\mu s$
ELA250/160/20 $U_L > 6V \leq 60\mu s$
 $U_L < 6V \leq 400\mu s$
Temperature coefficient $\leq 0.01\%/^{\circ}C I_{max}$
(after 15 min. working time, const. $T_{ambient.}$ and U_{mains})

Protection:

Overload protection power limit, short circuit protection
Overvoltage protection power shutdown $U_{max} +6\%$
Thermal protection power shutdown, auto recovery
Reverse polarity wattless current diode and fuse

Environmental Condition:

Operating temperature 0 - +40°C (non condensing)
Cooling int. fans, temperature controlled

Safety:

Safety standard EN 61010-1
Isolation
AC input - load input 2.3kV_{eff}
AC input - protective ground 1.35kV_{eff}
Load input - protective ground $U_L \leq 75V: 500V_{eff}$
 $U_L = 160V: 1kV_{eff}$

EMC:

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

Control, operation and instruments:

Manual adjust current and resistance 2 set values each (A and B) for 2 channels selectable with a coarse and fine potentiometer each per channel
Pulse-generator I, R 100Hz or 1kHz switch-selected, waveform: square-wave, duty cycle 1:1
Load ON/OFF-function load to be switched at high Ohm state
Load ON function load current \approx setpoint
Load OFF function load current ≈ 0 at any setpoint
Instruments load current, load voltage:
LED digital
load current $\leq 50A: 3$ -digits
load current = 100A: 3.5-digits
load voltage $\leq 75V: 3$ -digits
load voltage 160V: 3.5-digits
accuracy: 0.2% $\pm 1d$
Error indication LED red: over temperature or over voltage
LED yellow: current limiting or power limiting
Parallel operation same units possible

Programming Interface (Remote Control Port):

jack RJ45
ext. control voltage 0 - 10V = 0 - I_{max}
any waveform,
bandwidth: (-3dB): 0 - 6kHz
accuracy: 0.2% I_{max}
Load ON/OFF function Load to be switched at high Ohm state
Monitor signal Load current, load voltage accuracy 0.2% I_{max} , U_{max}
Disturbance signal composit failure (active low) (OR-link at following failures: over temperature, over voltage, power limiting, current limiting)

Electrical Connections:

Input voltage Euro-plug with switch, rear side
 Load jack 4mmØ ≤ 40A

Dimensions and weight:

mounting form see table
 Dimensions The loads can be delivered as tabletop unit or as 19" rack mounted module.
 Weight

Option G-Module:

Programming 2 set values each at I-,U-, P-, G-Mode
 ext. voltage 0 - 10V = 0 - I_{max}
 ext. voltage 0 - 10V = 0 - P_{max}
 ext. voltage 0 - 10V = 0 - G_{max}
 ext. voltage 0 - 10V = 0 - U_{max}
 Load ON function Load current ≅ setpoint
 Load OFF function Load current = 0 at any setpoint
 Pulse generator I, G, P, U 1Hz, 10Hz, 100Hz or 1kHz*
 to be switched,
 waveform: square wave
 duty cycle 1:1
 *1kHz in U-Mode not available

Feed back signal load current, load voltage (0 -10V)
 accuracy: 0.2% I_{max}, U_{max}

Disturbance signals signal: composit failure (active low)
 signal: over temperature, over voltage
 signal: over load, current limitation
 signal: under voltage

Lead for programming 25 pol. Sub D jack

output-power (W)	DC load-voltage (V)	Load-current (A)	Load-resistance (Ohm)	Model-Number
250	0.35 - 75	0 - 20	0.05 - 15k	ELA250/75/20
250	0.35 - 75	0 - 40	0.04 - 7.5k	ELA250/75/40
250	0.35 - 160	0 - 20	0.05 - 32k	ELA250/160/20

Pin assignment RCP-Interface (Remote Control Port):

RCP	SIGNAL (RJ45)
Pin8	Analog-GND
Pin7	Control Voltage 0-10V
Pin6	Actual load current 0-10V
Pin5	Actual load voltage 0-10V
Pin4	Signal composit failure
Pin3	Command Load ON/OFF
Pin2	Digital-GND
Pin1	Auxiliary voltage +15V (max. 20mA load capacity)

Options:

- Sub front panel colour AL nature anodized
 ELA 250 without INT2E: 6HE, 16TE
 ELA 250 with INT2E: 6HE, 19TE
- Front-End unit without operation instruments
- CAN Open interface (on request)
- G-Module
- RJ45 connector for ELA 250 (with option G-module at ELA 250 ...: Sub D connector is a standard)
- Integrated Interface IEEE488.2 (GPIB)/RS232*/USB*
 INT2E with Lab-View driver

Option INT2E:

Programming 2 set values each at I-, P-, G-Mode with G-module, (1 set value at I-Mode without G-module)
 resolution : 12Bit (4000 steps per range)
 accuracy: 0.25% I_{max} (I-Mode)
 Puls generator I, G, P, U 1Hz, 10Hz, 100Hz or 1kHz*
 to be switched,
 waveform: square wave
 duty cycle 1:1
 *1kHz in U-Mode not available
 Monitor signal load current, load voltage
 resolution: 12 Bit (I_{max}/4000; U_{max}/4000)
 accuracy: 0.25% I_{max}, U_{max}
 Load ON function Load current ≅ setpoint
 Load OFF function Load current = 0 at any setpoint
 Function Local Lockout in remote the operation instruments at the front panel are not active
 Error signal signal: composit failure
 signal: over temperature, over voltage
 signal: powerlimiting, current limiting
 signal: under voltage
 Connectors 9 pole Sub D connecetor (RS232)
 24 pole IEEE488/GPIB-jack
 USB-jack type B

Shape, Dimensions, Weight						
Description	Shape	Width (mm)	High (mm)	Deep (mm)	Weight (kg)	
Load without Interface						
Load as tabletop unit	6U	A	70	220	340	4
Load with sub front panel for 19" rack mounting	6U	A - T FPL	70	220	340	4
Load as 19" rack mounting unit with 2pcs ELA250	2U	E	483	88,1	340	7,3
Load as 19" rack mounting unit with 1pcs ELA250, mounting on left hand side	2U	E - L	483	88,1	340	4
Load as 19" rack mounting unit with 1pcs ELA250, mounting on right hand side	2U	E - R	483	88,1	340	4
Load with Interface						
Load as tabletop unit	6U	A	95	220	340	4
Load with sub front panel for 19" rack mounting	6U	A - T FPL	95	220	340	4
Load as 19" rack mounting unit with 2pcs ELA250	3U	E	483	132,5	340	8,2
Load as 19" rack mounting unit with 1pc ELA250, mounting on left hand side	3U	E - L	483	132,5	340	4
Load as 19" rack mounting unit with 1pc ELA250, mounting on right hand side	3U	E - R	483	132,5	340	4

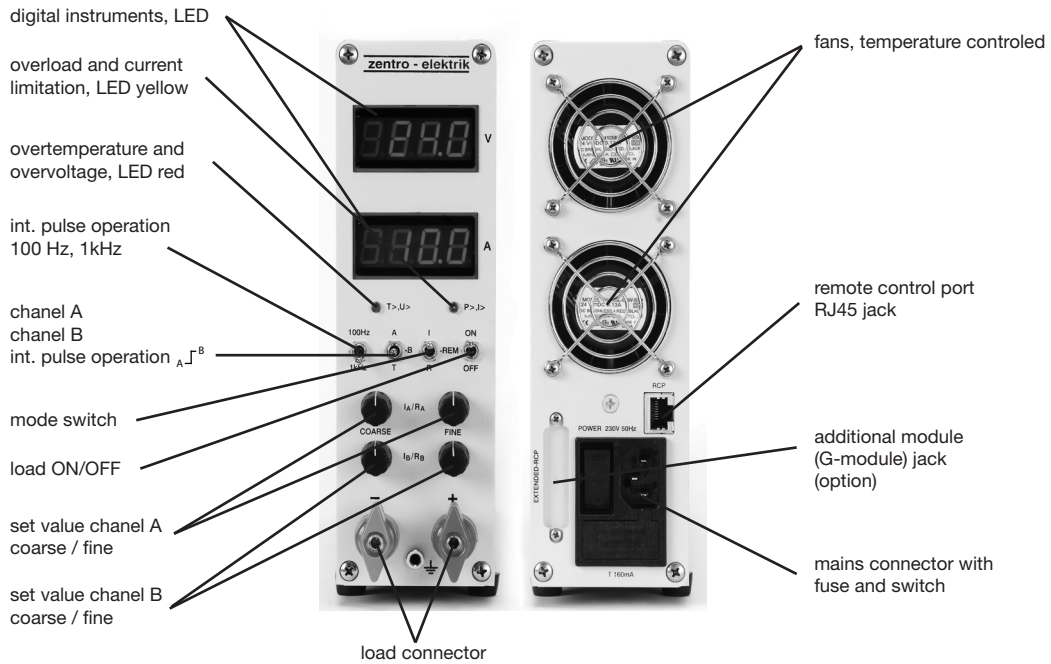
Options:

- Cable for external stand alone interface INT2
- IEEE 4888/GPIB - cable
- zero modem cable
- USB cable

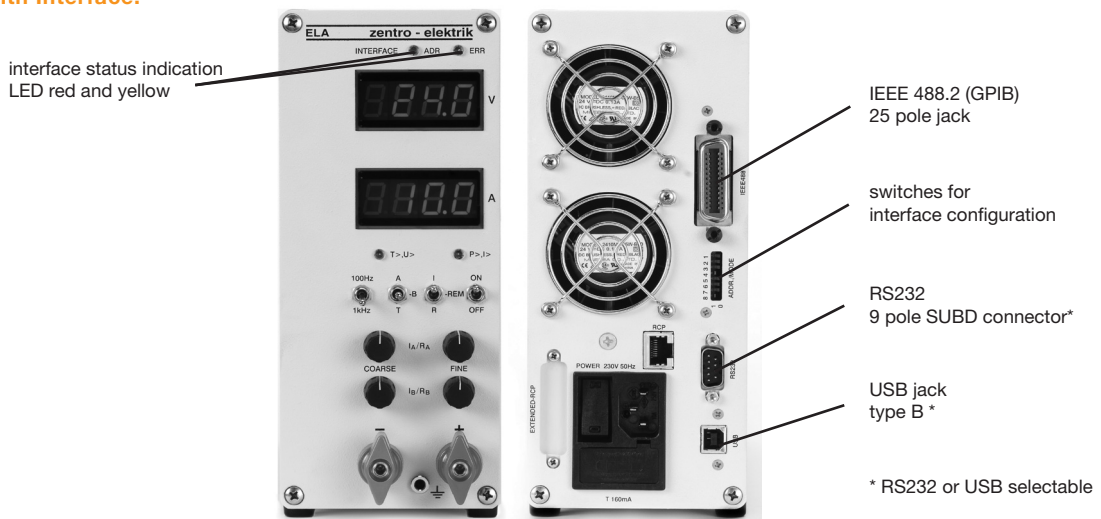
* RS232 or USB selectable

Electronic DC Load

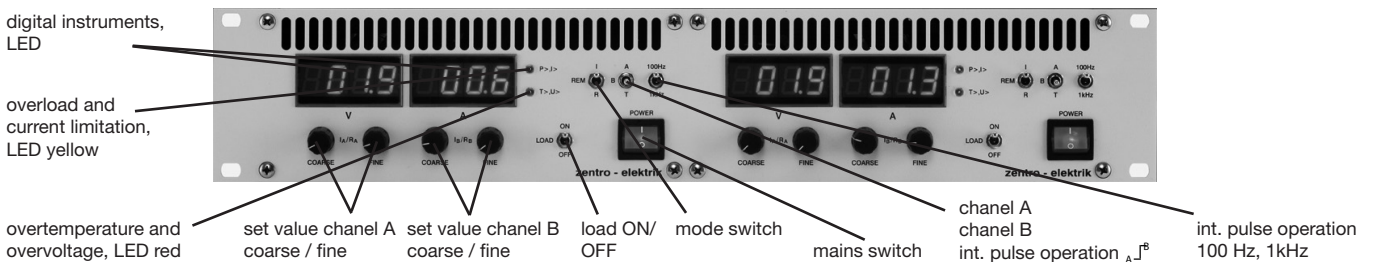
ELA 250 Watt:



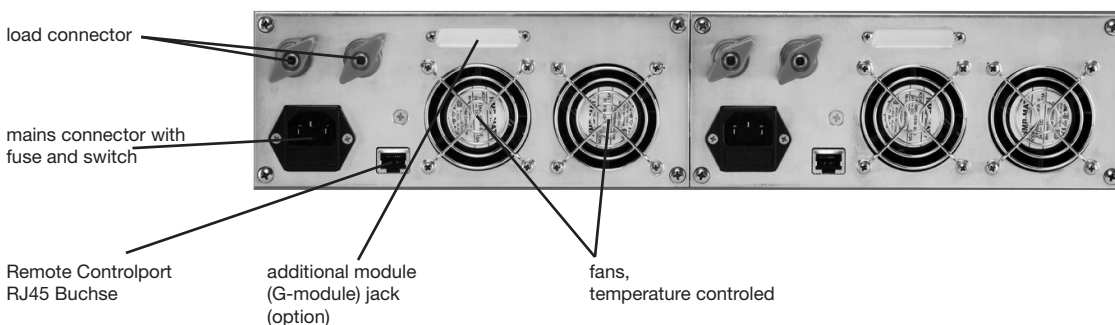
ELA 250 Watt, with Interface:



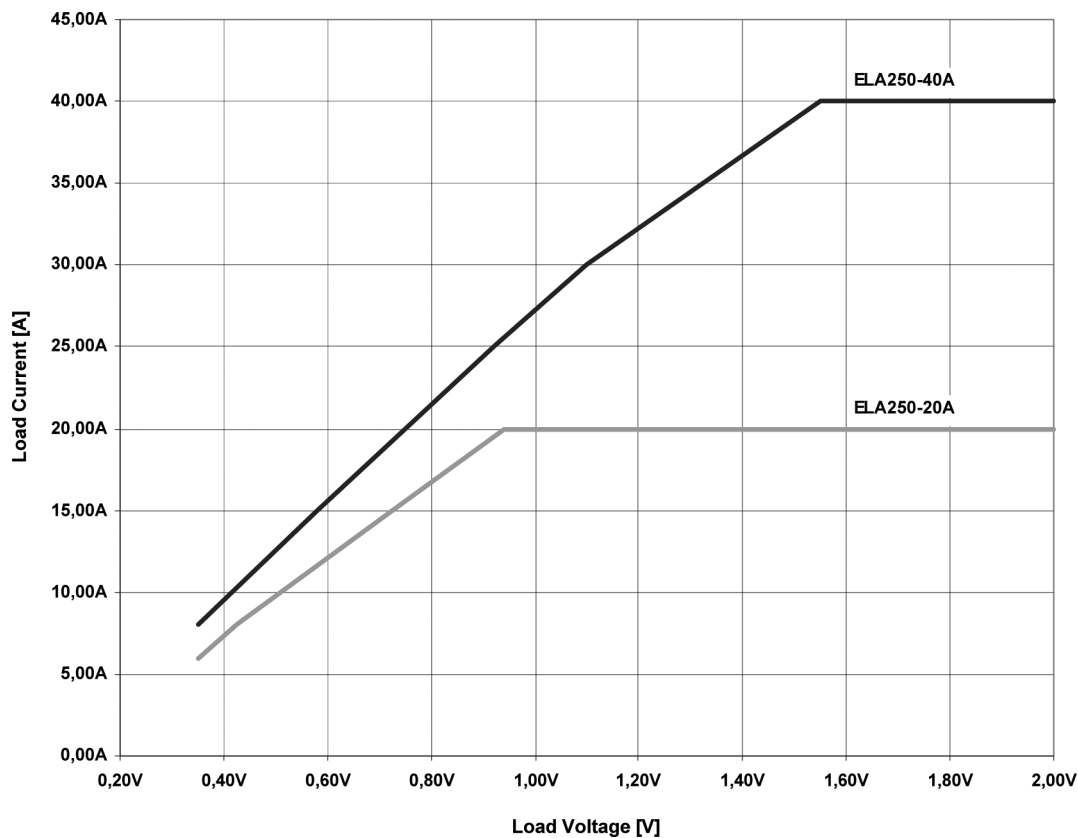
ELA 250 Watt, 2 pieces 19", 2U Front-view:



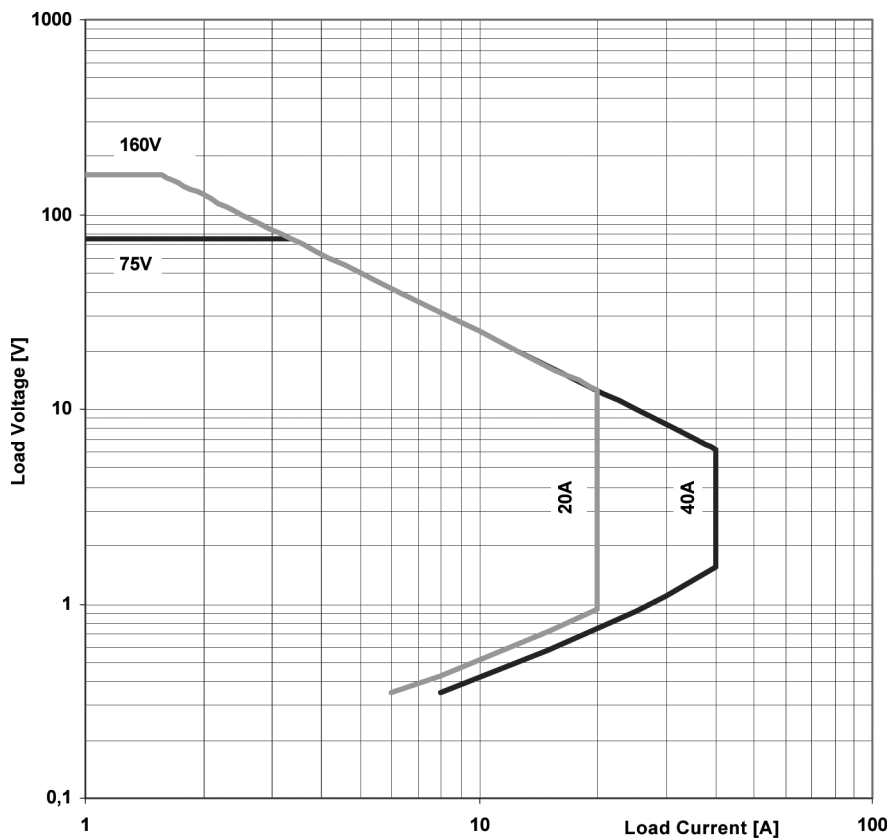
ELA 250 Watt, 2 pieces 19", 2U Back-view:



Minimum Voltage ELA250:



Operating Range ELA250:



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