

Electronic Load Unit 120

LOADSAVER®

- Multi-Channel Electronic Load
- Recycles > 80% of Loading Energy
- Programmable Control and Measurement
- DC Inputs (to 70V) & AC Inputs (to 260V)



The LOADSAVER product family is a revolutionary, compact and cost effective approach to the test and burn-in of AC and DC sources. LOADSAVER offers a highly versatile combination of multiple programmable load units coupled to an energy recycling system.

ELU 120 based LoadSaver Burn-in System

common output bus, which in turn feeds a single power-recycling unit (PRU). This recycling unit recycles the load energy back to a three phase AC mains.

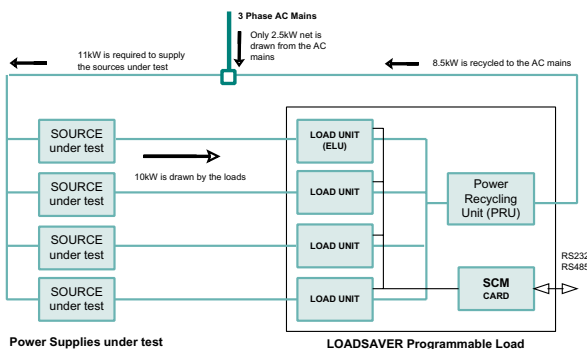
Features of the Electronic Load Unit 120

- Highly flexible and user configurable modular system
- Remote control and monitoring over RS485 and RS232 allow for automated process control
- Energy costs are dramatically reduced over prolonged testing, such as Burn-in
- Complicated and unreliable air handling and water cooling equipment is eliminated

Several different load units are available in the ELU 120 family, with DC voltages up to 70V per channel, DC currents up to 100A per channel and power up to 5kW per channel. Multiple channels can easily be paralleled for higher power configurations. DC ELUs feeding into the same PRU share a common zero Volts rail. Positive input ELUs have a common negative rail. Negative input ELUs with a common positive rail are also available. An AC input load (fully isolated), specially designed for testing un-interruptible power supplies, is also available.

The diagram below shows a typical Loadsaver configuration, with 10kW drawn from the sources under test. If these sources are 90% efficient, 11kW will be drawn from the mains. However due to the recycling abilities of Loadsaver, 8.5kW of this power shall be returned to the mains resulting in a net power draw of 2.5kW for the total system.

The LOADSAVER is controlled from a computer communicating over an RS232 (single drop) or RS485 (multi drop) link to the SCM card. An IEEE488 converter is also available. Voltage, current and fault status may be monitored from the PC. A Windows compatible virtual instrument front end is available. Alternatively a simple but powerful command language makes it easy to incorporate the loadsaver into the user's own test program.



Two types of SCM card are available. The standard SCM controls up to 10 channels in constant current mode only. The extended version (ESCM) offers higher precision, constant current, constant resistance, constant voltage and constant power modes. An ESCM will control up to 8 channels.

Each electronic load unit (ELU) acts as a programmable current load under the direction of a system control and monitoring card (SCM). Loading power is not dissipated in the ELU as with traditional loads but is transferred to the ELU output for recycling. The ELUs feed into a

In summary, the Loadsaver combines versatility while significantly reducing the energy cost of testing high power sources. It saves on installation because of the lower current feed and lower cooling requirements.

Technical Specifications

Electronic Load Unit	Input Polarity	Vin range	I _{max} /Channel	P _{max} / Channel	Channels
ELU120-70/65/3k/2(4U)	Positive DC	24V to 70V	65A	3,000	2
ELU120-70/65/3k/2-N(4U)	Negative DC	-24V to -70V	65A	3,000	2
ELU120-70/100/3k/2(4U)	Positive DC	20 to 70V	100A	3,000	2
ELU120-70/100/5k/2(4U)	Positive DC	20 to 70V	100A	5,000	2
ELU120-230AC/20/1.5k/2-F(3U)	Isolated AC	85-130 Vrms 190-260 Vrms	20 Arms	1,500	2

Power Recycling Unit	Max. Power	AC Supply	Power Factor	Cabinet Size	Extra Load Space
PFCPRU120-20	20,000W	User specified, three phase	>0.98 (Load >30%)	20U 30U option 20U+20U option	None 12U 20U

Sys. Cntrl. & Mntr. Card	No. of Channels	Operating Modes	Basic Accuracy	Interface
SCM-001	10	I mode	1%	RS232
SCM-002	10	I mode	1%	RS485
ESCM-001	8	V, I, R, P modes	0.2%	RS232
ESCM-002	8	V, I, R, P modes	0.2%	RS485

Family Specifications

DC Inputs

<i>Current Setting Precision</i>	0.1A SCM, 0.01A ESCM	<i>Overtemperature</i>	Automatic shutdown
<i>Step Response</i>	0.3s, 25%-75% final value	<i>DC Voltage out of Range</i>	Automatic shutdown
<i>Terminals</i>	10mm studs	<i>Fuses</i>	Fusing at input & output of load

AC Regeneration Output

<i>No. of Phases</i>	3	<i>Recycling Efficiency</i>	Up to 85% typical
<i>Voltage and Frequency</i>	User specified	<i>THD</i>	2% at full load
<i>Terminals</i>	Screw clamp	<i>Mains Fault</i>	Internal circuit breaker
<i>Mains Loss & Overtemp.</i>	Automatic shutdown	<i>AC Power Factor</i>	>0.98 (30% to 100% load)

Auxiliary AC Supply

Safety	For control circuits: 1 phase, 115 / 230V, 50 / 60Hz, 7.2A / 3.6A
EMC	EN61010-1: 1993
CE	EN55081-2 : 1993, EN55082-2 : 1994
	Yes

Options

30U	30U cabinet which houses the PRU, leaving 12U of space for load units.
20U+20U	20U+20U split cabinet option, offers 20U of space for load units (24U special available).
RS485CI/F	RS232 to RS485 converter, useful for driving multi-drop RS485 from a PC.
IEEE488CI/F	Allows the RS232 loadsaver to be used on an IEEE488 bus.
LS_APPLET	Virtual instrument software for Microsoft Windows.

Ordering Information

n x ELU120	Your choice of load units. Do not mix positive and negative input units.
+ (E)SCM	Your choice of system control and monitoring card.
+ PFCPRU120	Your choice of recycling unit. You must specify AC mains voltage and frequency.
Options	Your choice of options should be specified when ordering.

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