SmartPower ATE

Electronic Load Unit 60

LOADSAVER©

- **Multi-Channel Electronic Load**
- **Recycles > 80% of Loading Energy**
- **Programmable Control and Measurement**
- **Up to 60 DC Load Channels of 3V to 60V**

ELU 60 based LoadSaver Burn-in System

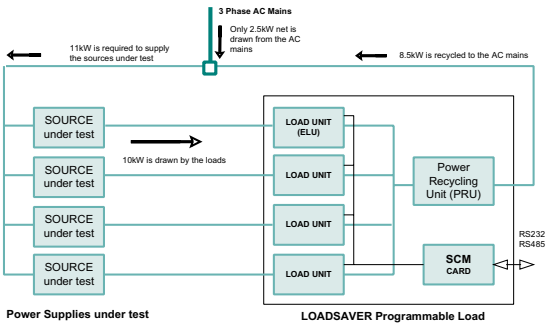
The LOADSAVER product family is a revolutionary, compact and cost effective approach to the test and burn-in of DC sources. LOADSAVER offers a highly versatile combination of multiple programmable load units coupled to an energy recycling system.

Features of the Electronic Load Unit 60

- Highly flexible and user selectable
- 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

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.

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 ELU's feed into a common output bus, which feeds a single power recycling unit (PRU). This unit recycles the load energy back to a three phase AC mains.



Several different load units are available in the ELU60 family, with DC voltages and currents of up to 60V and 25A per channel and power up to 375W per channel. Multiple channels can easily be paralleled for higher power configurations. A lower power ELU is available with an isolated input. This can be used for either positive or negative UUT's. The ELU60 load units are installed in an LSRACK mainframe which can carry up to 10 load units and one SCM card. The positive LSRACK takes positive and/or isolated input ELU's.

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

The LOADSAVER is controlled from a computer communicating over an RS232 (single drop) or RS485 (multi drop) link to the SCM cards. 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 also available. Alternatively a simple but powerful command language makes it easy to incorporate the loadsaver into the user's own test program.

Technical Specifications

Electronic Load Unit	Input Polarity	Vin range	Imax/channel	Pmax/channel	No. Channels
ELU60-60/25/375	Positive DC	3V to 60V	25A	375W	1
ELU60-25/5/125-F	Isolated DC	3V to 25V	5A	125W	1

Sys Cntrl. & Mntr. Card	No. 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

Load Unit Rack	Input Polarity	Capacity	Dimensions
LSRACK60/10	Positive	10 x ELU 60 + 1x (E)SCM	19" x 4U

Power Recycling Unit	Max. Power	AC Supply	Power Factor	Cabinet Size	Extra Load Space
PFCPRU60-12	12,000W	User specified, three phase	>0.98 (Load >30%)	20U	None
				30U option	12U
				20U+20U option	20U

Family Specification

DC Inputs

Current Setting Precision	0.1A SCM, 0.01A ESCM	*Overtemperature*	Automatic shutdown
Step Response	<5ms, 25%-75% final value	*DC Voltage out of Range*	Automatic shutdown
Terminals	4mm binding posts	*Fuses*	Fusing at input and output of load

AC Generation Output

No. of Phases	3	*Recycling Efficiency*	Up to 85% typical
Voltage and frequency	User specified	*THD*	2%
Terminals	Screw clamp	*Mains Fault*	Internal circuit breaker
Mains Loss & Overtemperature	Automatic shutdown	*AC Power Factor*	>0.98 (30% -100% load)

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

Options

30U	30U cabinet which houses the PRU, leaving 12U of space for LS Racks.
20U+20U	20+20 split cabinet option, offers 20U of space for LS Racks (24 Unit special available).
RS485CI/F	RS232 to RS485 converter, useful for driving multi-drop RS485 from a PC.
MAN	Manual operation (no SCM card).
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 ELU60	Your choice of load units.
+ m x LSRACK60	The appropriate load unit racks.
+ m x (E)SCM	Your choice of system control and monitoring cards.
PFCPRU60	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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