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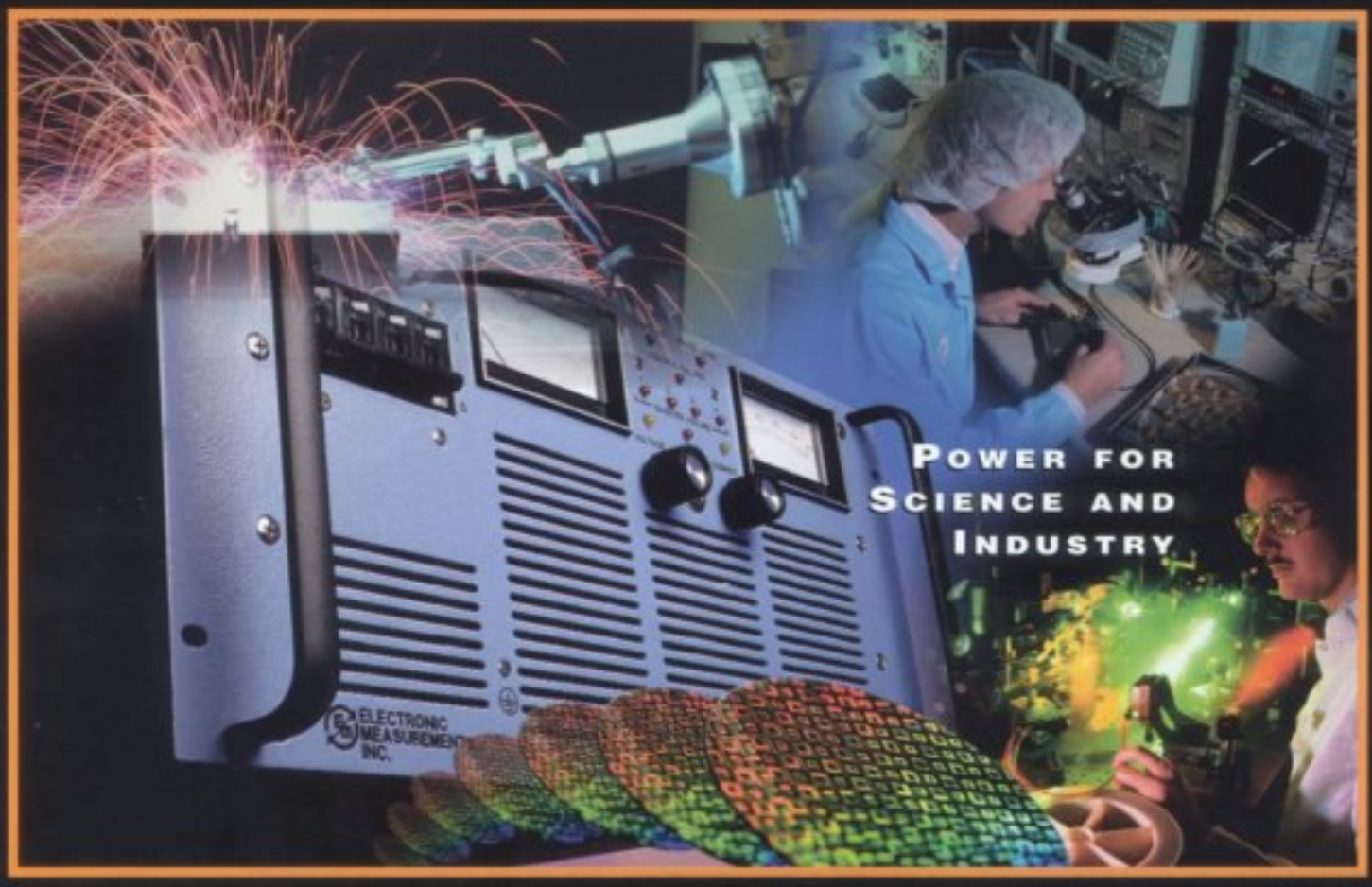
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Find the *TDK-Lambda ESS 60-60-7-TP-CE-1568* at our website: *Click HERE*

ESS Series Power Supplies



LAMBDA EMI

a.l.e. systems

ESS Series Power Supplies



Product Description

The ESS is a Constant Voltage, Constant Current Programmable DC power supply. Since its introduction in 1995, the ESS has evolved into one of the most reliable, high-performance power supplies available. It features a pulse-by-pulse current limit which provides excellent performance in demanding high current applications such as RF Amplifiers, DC Motors and Magnetic Coils. The many standard features make it an excellent choice for both OEM and laboratory applications.

This very high density supply provides 10 kW or 15 kW in a 5U (8.718" H) rack-mount package. Outputs are available to 600 V (500 V, 15 kW) and 1400 amps.

Front panel includes potentiometers for voltage and current control along with meters for both. LED indicators clearly show Overvoltage Condition, Inverter Failure, Phase Loss, and Control Failure.

In addition to Front Panel Controls, the Rear Panel offers analog programming and monitoring of voltage and current as well as an optional RS232/IEEE 488 Interface. For higher power systems, ESS power supplies may be connected in series and parallel. Contact factory for details.

Custom Features

Lambda EMI can provide a wide range of custom features in the ESS package. Some of them include: special front panel color, safety and control interlocks, custom voltage and/or current outputs, and precision current monitor.

Manufactured in an ISO9001 Certified factory, the ESS Series carries a five (5) year warranty.

Features

- Front Panel Adjustable Overvoltage Protection protects load
- Thermal Protection includes LED indicators
- Pulse-by-Pulse Current Limit for fast recovery
- Parallel or Series Operation
- Transient Protection
- Phase Loss Detection (neutral loss detection included above 208 VAC inputs)
- Failsafe Soft Start
- Power Factor 0.9, Efficiency 85% lowers operating costs and heat generation
- Internal RS232/IEEE 488 digital interface is optional
- Ten Turn Potentiometers for voltage and current are standard
- Voltage and Current, Program and Monitor are 0-5 V standard (0-10 V Program and Monitor, Voltage and Current are optional)
- Output Switching Frequency 240-260 kHz
- UL and CE approval are available on selected models. Please contact factory for details
- Constant Voltage/Constant Current with automatic crossover and mode indicator LED
- Choice of Analog or Digital Meters
- **"Super Sense"** (now standard) provides both voltage and current monitor at the load. This also allows the ESS meters to read the voltage and current at the load. (OVP stays local to protect the load and power supply)

Applications

Burn-in
Test and Measurement
Medical
Magnetic Coils
DC Motors
RF Amplifiers
Electro-Deposition
Semiconductor Manufacture
Particle Physics

Operational Ratings

CE

10 kW Models

15 kW Models

Model Number	Volts (DC)	Amps	Ripple (mV) p-p PARD	Model Number	Volts (DC)	Amps	Ripple (mV) p-p PARD
ESS 7.5-1000	7.5	1000	50	-	-	-	-
ESS 10-1000	10	1000	50	ESS 10-1400	10	1400	50
ESS 12.5-800	12.5	800	50	-	-	-	-
ESS 20-500	20	500	60	ESS 20-750	20	750	60
ESS 25-400	25	400	60	-	-	-	-
ESS 30-333	30	333	60	ESS 30-500	30	500	60
ESS 40-250	40	250	75	ESS 40-375	40	375	75
ESS 50-200	50	200	75	ESS 50-300	50	300	75
ESS 60-165	60	165	75	ESS 60-250	60	250	75
ESS 80-125	80	125	75	ESS 80-185	80	185	75
ESS 100-100	100	100	75	ESS 100-150	100	150	75
ESS 125-80	125	80	75	ESS 125-120	125	120	75
ESS 150-66	150	66	75	ESS 150-100	150	100	75
ESS 160-62	160	62	75	ESS 160-93	160	93	75
ESS 200-50	200	50	75	ESS 180-95	180	95	75
ESS 220-46	220	46	75	ESS 200-75	200	75	75
ESS 250-40	250	40	125	ESS 250-60	250	60	125
ESS 300-33	300	33	125	ESS 300-50	300	50	125
ESS 400-25	400	25	200	ESS 400-37	400	37	200
ESS 500-20	500	20	300	ESS 500-30	500	30	300
ESS 600-16	600	16	300	ESS 600-25	600	25	300

SPECIFICATIONS

Input:

Three Phase, 47-63 Hz

Nominal Voltage	Voltage Range	Input Current A/Ø	
		10 kW	15 kW
220	190-250	35	52
380	348-418	20	28
400	360-440	18.7	26.7
415	374-452	19	27
440	396-484	17.5	26
480	432-528	16	23

380 VAC and higher input voltages require 5-Wire configuration. 4-5 Wire conversion transformers are available. Please consult factory.

Efficiency:

85-91 percent

Power Factor:

0.8 - 0.93

Regulation Constant Voltage Mode:

An output current load change of 100% will cause an output voltage variation of less than 0.1%.

Regulation Constant Current Mode:

An output voltage load change of 100% will cause an output current change variation of less than 0.1%.

Line Effects:

When operating in either the Constant Voltage mode or the Constant Current mode, variations in the regulated output will not exceed 0.1% of the output for low line to high line AC input changes.

Transient Response:

For a 30% load step the transient response is less than 650 microseconds for units up to 20 V. For units above 20 V, transient response is increased by a factor of Vmax/20.

Stability:

Maximum deviation in either voltage or current for an eight (8) hour period is 0.05% under conditions of constant line, load and temperature.

Operating Temperature:

All ESS models are capable of continuous duty performance between 0° C to 50° C. For operation above 50° C, derate by 4%/ °C above 50° C. Units may be safely stored at temperatures of -55° C to 85° C.

Temperature Coefficient:

The output voltage temperature coefficient is 0.02% per °C of rated output voltage. The output current temperature coefficient is 0.03% per °C of the rated output current.

Controls:

All ESS models are provided with a UL listed circuit breaker which combines primary circuit protection with on/off control. Output voltage and current are adjusted via 10 turn potentiometer at the front panel. Simultaneous indication of output current and voltage is provided by front panel meters. The voltmeter is connected across the terminals so that the meter will read the voltage at the power supply terminals.

Remote Start/Stop/Interlock:

All ESS models are capable of being remotely started or stopped by means of an external AC or DC voltage source.

Remote Sensing:

Separate voltage sense and power terminals are provided to enable specified regulation directly at the terminals of the load. This feature provides automatic compensation for the voltage drop in the power distribution system.

"Super Sense" provides both voltage and current monitor at the load. This also allows meters to read at the load. (OVP stays local to protect the load and power supply.)

Remote Analog Programming:

These supplies will respond to front panel control or external control signals. This control signal may be resistance, current or voltage. Full scale output is signaled by 5000 ohms, 5 VDC or 1 mA (unless special programming option has been specified).

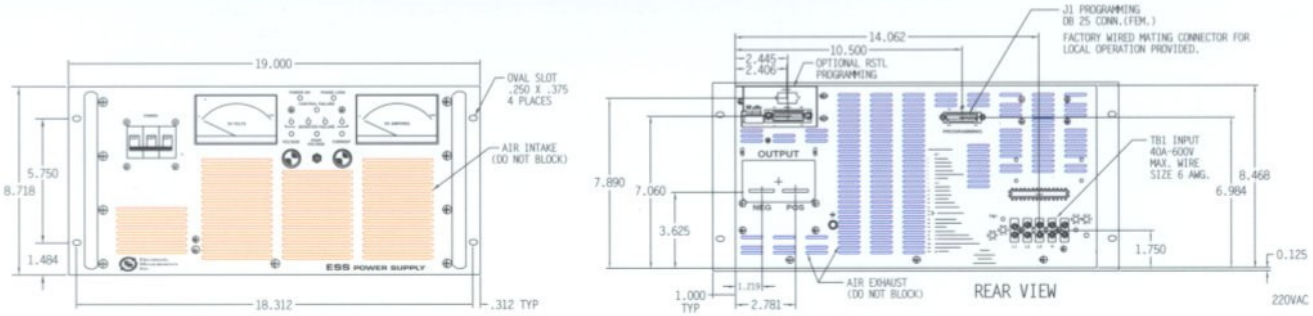
Digital Programming (optional):

The RSTL allows the user to program and measure the output voltage and current via a computer. The RSTL contains both IEEE 488 and RS232 capability. The local and remote programming signals are software selectable. The RSTL has an output "shutoff" flag.

Overvoltage:

Overvoltage protection, adjustable from the front panel is standard on all models. This will short circuit (crow bar) the power supply output to protect the load when the output voltage reaches the OVP set value. This protection is effective regardless of the cause of the overvoltage. Events which will trigger OVP include, but are not limited to, knob turned inadvertently, broken remote sense lead, voltage applied from external source, and servo failure in the power supply.

Mechanical



Case Depth behind Front Panel, excluding Output Terminals - 22"

How To Order

The following chart describes the model number for the ESS power supply family.

ESS XX-XXX-X-X-XX-XX-XXXX

DC Voltage Range

DC Current Range

AC Input Voltage Selection

For This Input Voltage	Use This Suffix
190–250 VAC 47–63 Hz	-2
180–220 VAC 47–63 Hz	-7
348–418 VAC 47–63 Hz	-8
374–452 VAC 47–63 Hz	-9
360–440 VAC 47–63 Hz	-10
432–528 VAC 47–63 Hz	-11

Other input voltages and frequencies available upon request.

Options

Feature	Suffix
Lock Bushings	LB
Test Points	TP
Output Terminal Covers	TC
RS232/IEEE 488 Programmer	RSTL
CE Mark Only On Input -10	CE

Panel Meters

Analog	OMIT
Digital	D
No charge for digital meters	

Notes:

1. Input voltages of 380 VAC and above require 5-Wire configuration. Consult factory for 4-Wire to 5-Wire conversion transformers.
   For Single Power Supply: 28-004-952
   For up to Three: 28-004-890

2. Other input voltages and frequencies available upon request.

Examples:

ESS 20-500-2-D
ESS 10-1000-10-D-CE
ESS 50-200-2-LB-TC-RSTL

Special Programming Options

Programming		Monitoring		Suffix
Voltage Channel	Current Channel	Voltage Channel	Current Channel	
0–5 V	0–5 V	0–5 V	0–5 V	None Req'd
0–10 V	0–10 V	0–5 V	0–5 V	-891
0–10 V	0–10 V	0–10 V	0–10 V	-806

Quality Policy

Quality excellence is the foundation for management of our business and provides the principal strategy for achievement of our goals as a World Class Manufacturer through customer satisfaction.

Therefore, each of us will:

- Provide products and services that consistently meet or exceed the quality expectations of our customers. This includes both internal and external customers.
- Dedicate ourselves to continuous quality improvement of our products and services by actively pursuing the identification and elimination of non-value-adding activities within all our processes.
- Pride ourselves on the quality of our workmanship by striving to perform all actions right the first time.

The Employees of Lambda EMI

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