Excellence in High Voltage

LS Series Data Sheet

LS001, LS2.5, LS005, LS010,

LS015, LS020, LS030, LS050,

PRECISION HIGH VOLTAGE MODULES

Applications: (1 Watt max)

Mass spectrometers
Electron microscopes
Nuclear instruments
Photomultiplier tubes
Microchannel plates

- 1kV, 2.5kV, 5kV, 10kV, 15kV, 20kV, 30kV, 50kV
- Highest Stability, Lowest Ripple, Lowest Drift
- Externally programmable or Internal control (option)
- Short circuit and flashover proof
- 24 hour burn in
- Low radiated magnetic field
- Positive, negative & remote reversible versions

The LS Series sets a new standard for high voltage precision and stability. By optimising the Low Stress™ technologies used in our leading 10 Watt HP Series for 1 Watt applications, the new LS Series has less than 1ppm ripple, 10ppm/°C temperature coefficient, and 50ppm drift/hr throughout the range. Each of the units includes a differential control input.

To take full advantage of the performance available from the LS Range, they are initially only being made available to our OEM customers as application specific, custom optimised, modules.

All units are short circuit proof and use proven techniques to drive a high frequency oscillator and ferrite high voltage step-up transformer. These advanced power supplies build on Applied Kilovolts' legendary reputation for reliability, being constructed from conservatively rated components with their reliability further enhanced by information gained over many years of field operation.

Available as positive or negative up to 50kV, and electrically reversible at voltages up to 30kV.

Please see the HPZ range for zero crossing reversible (bi-polar) units.

We manufacture a large number of customized OEM versions and would be pleased to discuss your application with you.

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ELECTRICAL SPECIFICATION

POSITIVE & NEGATIVE POLARITY UNITS

UNIT TYPE	POLARITY	OUTPUT	RIPPLE AT FULL LOAD	SIZE (mm)
LS001PIP010	POSITIVE	10 volts to 1kV at 1mA	2mV peak to peak	156 X 127 X 64
LS001NIP010	NEGATIVE			
LS2.5PIP010	POSITIVE	10 volts to 2.5kV at 400uA	3mV peak to peak	156 X 127 X 64
LS2.5NIP010	NEGATIVE			
LS005PIP010	POSITIVE	10volts to 5kV at 200uA	5mV peak to peak	156 X 127 X 64
LS005NIP010	NEGATIVE			
LS010PIP010	POSITIVE	20 volts to 10kV at 100uA	10mV peak to peak	156 X 127 X 64
LS010NIP010	NEGATIVE			
LS015PIP010	POSITIVE	30 volts to 15kV at 66.7uA	15mV peak to peak	207 X 148 X 74
LS015NIP010	NEGATIVE			
LS020PIP010	POSITIVE	50 volts to 20kV at 50uA	20mV peak to peak	207 X 148 X 74
LS020NIP010	NEGATIVE			
LS030PIP010	POSITIVE	100 volts to 30kV @ 33.3uA	30mV peak to peak	207 X 148 X 74
LS030NIP010	NEGATIVE			
LS050PIP010	POSITIVE	200 volts to 50kV at 20uA	50mV peak to peak	TBD
LS050NIP010	NEGATIVE			

REVERSIBLE POLARITY UNITS

UNIT TYPE	POLARITY	OUTPUT	RIPPLE AT FULL LOAD	SIZE (mm)
LS001RIP010	REVERSIBLE	±10V to ±1kV at 1mA	2mV peak to peak	163 X 152 X 71.5
LS2.5RIP010	REVERSIBLE	±10V to ±2.5kV at 400uA	3mV peak to peak	163 X 152 X 71.5
LS005RIP010	REVERSIBLE	±10V to ±5kV at 200uA	5mV peak to peak	163 X 152 X 71.5
LS010RIP010	REVERSIBLE	±20V to ±10kV at 100uA	10mV peak to peak	163 X 152 X 71.5
LS015RIP010	REVERSIBLE	±30V to ±15kV at 66.7uA	15mV peak to peak	233 X 204 X 114
LS020RIP010	REVERSIBLE	±50V to ±20kV at 50uA	20mV peak to peak	233 X 204 X 114
LS030RIP010	REVERSIBLE	±100V to ±30kV at 33.3uA	30mV peak to peak	333 X 204 X 114
See HPZ data sheet for continuously variable zero crossing power supplies				

INPUT VOLTAGE: - +24 volt d.c. ±10% at <150mA, for Unipolar, and at <200mA for Reversibles. Negative input terminal common to HV earth return.

OUTPUT VOLTAGE: - See tables above.

LINE REGULATION: - Less than 2ppm of maximum voltage for input changes of 1 volt.

LOAD REGULATION: - Less than 10ppm for load changes from 10% to 100%. (Measured at maximum voltage).

OVERLOAD PROTECTION: - Flashover and short circuit proof. Re-entrant current limit.

TEMPERATURE CO-EFFICIENT: <10ppm/^{o}C from 20^{o}C to 50 ^{o}C

DRIFT: - <50ppm per hour (<0.005%) Measured at constant input voltage, load current
<100ppm per 8 hours (<0.01%) & ambient temperature after 0.5 hour warm up.

CONTROL: - 10V analogue signal. (0 to +10V gives zero to maximum output, tolerance +2%, -½%).

Input impedance > 100Kohm. EXTERNAL potentiometer = Option Code PP INTERNAL potentiometer = Option Code FP

READOUT: - Voltage monitor:- 0 to +10V represents zero to maximum output, tolerance ±2% (Source resistance 10k).
Precision Current Monitor:- 0 to 10V represents zero to 100% o/p current, tolerance ±2%, Offset ±0.1% of FS.

OPERATING TEMP : - 0 ^{o}C to +50 ^{o}C

STORAGE TEMPERATURE: - -35 ^{o}C to +85 ^{o}C

R.F.I.: - Steel case for low radiated magnetic field.

MECHANICAL SPECIFICATION

Fixings: Blind Fasteners into the base.

Output: By 1 metre screened cable, or optional integrated high voltage connector
N.B. Reducing the cable length may increase the ripple voltage.

Input Connector: 15 way D-type

e.g. Order Code: LS010NIP010 = negative 10kV unit,
LS005PPP010 = positive 5kV unit for control by External Potentiometer.