146-1955

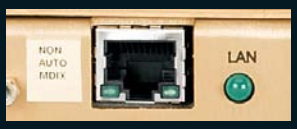
WE SPEAK YOUR LANGUAGE.

Kepco's Series KLP

A NEW PARADIGM IN THE DESIGN OF A-C TO D-C PROGRAMMABLE POWER SUPPLIES.

AN ISO 9001 COMPANY
KEPCO®
THE POWER SUPPLIER™
SINCE 1946

TALK. LISTEN.



ETHERNET

Models with the -1.2K suffix provide a LAN port which is an LXI-approved Ethernet- based interface allowing multiple-user access via a standard web browser. The factory default LAN settings on the KLP are DCHP on, AUTOIP on. When the power supply is powered up, it will try to find a DCHP server and get an IP address, If a server is not found, the KLP will use AUTOIP to get an address.

IEEE-488

In all models, the GPIB port accepts a standard GPIB connector and communicates bi-directionally with a GPIB host computer interface. The GPIB input supports LabView G which provides a "soft" panel visible on the driving computer. VXI plug&play is also supported. This also provides a "soft" panel display on the host computer. These functions are described in the KLP Developer's Guide.

RS-232

Models with the -1200 suffix support RS-232 operating at baud rates up to 38,400 (default). The format is compatible with SCPI, offering programming resolution of 0.024% with a readback accuracy of 0.1% of E_{max} or I_{lim}.

ANALOG I/O

The input defaults are 0 to 10V d-c voltage or 0 to 10K ohms resistive. Both voltage setting and current setting are controllable by these analog signals. The maximum levels can be set in the calibration routine to match whatever a user has available (0-5V, 0-3.3V etc.) Readback is a 0-10V proportional signal. Isolated form-C relay contacts provide a composite status flag.

KEPCO'S KLP IS PROGRAMMABLE IN MANY LANGUAGES, USING MANY COMMON INTERFACES.

There are two versions of KLP offered, with differing digital programming options. Models with the suffix -1200 are equipped with GPIB (IEEE-488.2) and RS-232 digital programming ports. Models with the suffix -1.2K are equipped with a LAN (Ethernet, RJ-45) connector in place of the RS-232. The LAN interface is an LXI-approved ethernet-based interface that allows multiple-user access via a standard web browser.

LXI™

The GPIB port accepts addresses 1 to 31 (factory default is 6). The RS-232 operates at baud rates up to 38,400 (default). All digital programming ports provide SELV (Safety Extra Low Voltage) isolation for operator and equipment protection. The format is compatible with SCPI, offering programming resolution of 0.024% with a readback accuracy of 0.1% of E_{max} or I_{lim}.

All KLP models may be controlled by analog signals, a variable voltage or a variable resistance. These analog inputs are fully isolated from the output and the chassis.

The KLP offers storage of user-programmed active settings. In addition to adding single steps, a user may add multiple steps to produce voltage or current ramps.

Rear view, Ethernet (LAN) port, -1.2K version

Rear view, RS-232 port, -1200 version

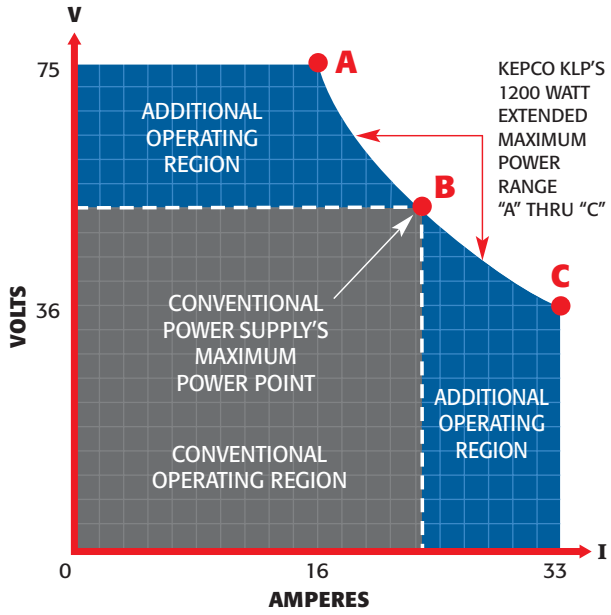
Kepco provides three instrument drivers: IVI-COM, LabView G and VXI plug&play, which simplify programming of the KLP power supply via the digital interfaces. These drivers and sample programs are supplied on a CD shipped with each unit and may be downloaded from the Kepco website at: www.kepcopower.com/drivers.

Call us to TALK about the Series KLP Power Supplies.

KEPCO, INC. • 131-38 Sanford Avenue • Flushing, NY 11355 USA
Tel: (718) 461-7000 • Fax: (718) 767-1102
Email: hq@kepcopower.com • **www.kepcopower.com/klp.htm**

Using high-frequency switch-mode topology for high efficiency and small size, the KLP provides 1200 watts of well-regulated, controllable d-c power in a 1U (1.75 inch high) by 19 inch rack-mountable package.

KLP REPLACES THE NEED FOR MULTIPLE POWER SUPPLIES BY EXPANDING THE OPERATING REGION. THE BREAKTHROUGH OF A HYPERBOLIC POWER LIMIT DELIVERS A FULL 1200 WATTS OVER AN EXPANDED OPERATING RANGE, NOT JUST A SINGLE POINT.



KEPCO IS NOT JUST AHEAD OF THE CURVE, WE'VE FORMED A WHOLE NEW ONE.

The KLP output locus is not limited to the familiar rectangular CV/CC shape used by most laboratory-type power supplies. KLP features a hyperbolic power limit formed by an infinite number of volt-ampere combinations that remain within the power supply's overall 1200 watt power limit. The KLP continuously calculates what the maximum current can be at a given voltage setting to stay within its 1200 watt power envelope.

The result is two loci of constant voltage and constant current forming a third locus by intersecting in a constant power hyperbolic curve. This hyperbolic curve opens a much wider operating range of reduced current at higher voltage and reduced voltage at higher current – operating regions that are unavailable in conventional power supplies.

Because the range of possible outputs from a single KLP model is so much greater than what is customary, KLP supports the idea of a virtual model – a user-defined maximum programmable voltage and current profile, within the 1200 watt power limit and the KLP's voltage and current maxima. Once established, the KLP will not accept programmed values outside of these limits whether from the front panel in local mode, or from the digital (GPIB, RS-232, or LAN) ports, or the analog input ports in remote mode. The virtual-model settings are password protected.

KLP MODEL TABLE

MODEL	RATED VOLTAGE RANGE (1)	MAXIMUM CURRENT FOR RATED VOLTAGE	MINIMUM PROGRAMMABLE CURRENT	RATED CURRENT RANGE (1)	MAXIMUM VOLTAGE FOR RATED CURRENT	RIPPLE AND NOISE (2)	EFFICIENCY @115V a-c
KLP 10-150-1.2K (3)	0-10V	120A@10V	3.2A	0-150A	8V@150A	75 mV	80%
KLP 20-120-1.2K (3)	0-20V	60A@20V	1.6A	0-120A	10V@120A	75 mV	82%
KLP 36-60-1.2K (3)	0-36V	33.3A@36V	0.8A	0-60A	20V@60A	125 mV	83%
KLP 75-33-1.2K (3)	0-75V	16A@75V	0.4A	0-33.3A	36V@33.3A	125 mV	84%
KLP 150-16-1.2K (3)	0-150V	8A@150V	0.2A	0-16A	75V@16A	125 mV	86%
KLP 300-8-1.2K (3)	0-300V	4A@300V	0.1A	0-8A	150V@8A	300 mV	87%
KLP 600-4-1.2K (3)	0-600V	2A@600V	0.05A	0-4A	300V@4A	400 mV	88%

(1) The maximum current and voltage are constrained by the 1200 watt power limitation.
(2) Bandwidth: 20MHz; low frequency ripple may be higher at loads less than 30 Watts.
(3) Models shown with the suffix -1.2K refer to the LAN (LXI) interface. RS-232 interface models use the suffix -1200. All specifications apply to both types of models.

This KEPCO product is backed by a firm 5-YEAR WARRANTY

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FEATURES

Switch mode topology for cool, efficient operation

GPIB and isolated analog programming standard on all models

-1200 models have an RS-232 interface

-1.2K models replace the RS-232 interface with an Ethernet (RJ-45) connector supporting LAN (LXI)

1U panel height at 1200 watts

Front to back air flow allows full power operation without spacers between supplies

Seven models:
KLP 10-150-*, KLP 20-120- *, KLP 36-60- *, KLP 75-33- *, KLP 150-16- *, KLP 300-8- *, KLP 600-4- *

* -1200 suffix includes RS-232 interface
* -1.2K suffix includes LAN (LXI) interface

Wide-range a-c input, 100-255V a-c with PFC

Dimensions: HxWxD
1.75" x 19" x 17.5"
44.45 x 482.6 x 443.7 mm

Weight:
15 lbs., 6.82kg

FOR FULL SPECS:

www.kepcopower.com/klp.htm

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KLP INPUT CHARACTERISTICS

SPECIFICATIONS		RATING/DESCRIPTION	CONDITION
a-c Voltage	nominal	100-240V a-c	Single phase
	range	100-255V a-c	Wide range
d-c Voltage	range	125-420V d-c	No regulatory agency approval
Frequency	nominal range	50-60 Hz	Single phase
	maximum	45-440 Hz	Increased leakage above 66 Hz
Power Factor	typical	0.99	Meets EN 61000-3-2
Maximum Input Current	120V a-c	13A rms	Rated load (1200W)
	240V a-c	6.5A rms	
Inrush Current	265V a-c	40A	Peak
	132V a-c	20A	
Input Fusing		Circuit Breaker	2-line
Low a-c Protection		Self Protected	No fixed limits
Output Hold Up	typical	10 milliseconds	Ride through
Leakage Current	115V a-c, 60 Hz	5mA	
	230V a-c, 50 Hz	10mA	

KLP OUTPUT CHARACTERISTICS

SPECIFICATIONS		RATING/DESCRIPTION	CONDITION
Stabilizer Type		CV/CC	Voltage/Current
Adjustment Range	voltage	0-100% of rated voltage	No minimum load required
	current	min-100% of rated current(1)	
Source Effect	voltage	0.01% E_{max}	Over full source range
	current	0.01% I_{max}	
Load Effect	voltage	0.01% E_{max}	Over full load current range
	current(2)	0.02% I_{max}	
Temperature Effect	voltage	0.2%/ºC	0-50ºC
	current	0.2%/ºC	
Time Effect (drift)	voltage	0.05%/24hr	After 30 minute warmup
	current	0.05%/24hr	
Error Sensing		0.25 volts per wire	Above rated output
Isolation Voltage		600V d-c or peak	Either output terminal to ground
Transient Recovery for Load Change	excursion	1% of E_{max}	50% load step 2A/µsec max
	recovery	2 msec	Return to 0.1% of setting
Turnon/turnoff Overshoot		Same as load transient response limits	
Overvoltage Protection	voltage	20-120% of E_{max}	User selectable recovery
Overcurrent Protection	current	72-120% of I_{max}	User selectable recovery
Overtemperature Protection		Shutdown	User selectable recovery
Output Lead Fault Protection		Shutdown	User selectable recovery
Parallel Operation		Active load sharing within 5% of I_0 rated	Up to 5 units maximum(3)

(1) See Model Table for minimum programmable current.
(2) After settling effect.
(3) -1.2K models are not Master/Slave capable.