

600W

BENCH POWER SUPPLIES

The PLS600 is a programmable DC power supply with a single output that offers output power to 600 watts. With 12-bit D/A & A/D converters embedded, the power supplies come with the capability of reporting voltage and current very accurately.

The PLS600 series provides convenient digital rotary controls for voltage and current adjustment. The power supplies also come with rear ports that allow remote control via USB, Ethernet, and analog control inputs. The USB and Ethernet inputs are SCPI compliant and have LabView drivers available on the National Instruments website. The PLS600 series is LXI certified, details for using this interface can be found in the Programming Manual.



Applications



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Resource Links

[Click Here for the Programming Manual](#)

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Features

Output Voltage & Current

Model Number ⁽¹⁾	Voltage	Current	Power
PLS6003033	30V	33A	600W
PLS6005020	50V	20A	
PLS60010010	100V	10A	
PLS6002005	200V	5A	
PLS6004002.5	400V	2.5A	

(1) PLS600 series product are shipped without a mains lead. For US mains lead order part US-MAINS-IEC. For EU main lead order part EU-MAINS-IEC. For UK mains lead order par UK-MAINS-IEC.

(2) 1U Rack Mount kit available. Order part number PLS600 RACK KIT for 1 or 2 x PLS600.

Rotary Controls

The digital rotary controls allow both fine and rapid adjustment of the output voltage and current. They are velocity sensitive so that a slow turn allows fine adjustment of voltage or current and rapid turning quickly adjusts voltage or current over a large range.

Precise voltage and current measurement

Besides the precise output, the PLS600 series also offers the capability to measure voltage & current accurately (read back), saving users the extra expense and space for extra measuring instruments. This capability is available from the display or the readings may be read into the controlling device.

OVP (over voltage protection), OCP (over current protection) and OPP (over power protection) functions

The over voltage protection (OVP), over current protection (OCP) and over power protection (OPP) features limit the maximum output current and voltage to avoid damage to the unit under test (UUT).

Series and parallel capability

Up to 4 units can be connected in (master/slave mode) and up to 2 units can be connected in series.

Specification

Unless otherwise noted, specifications are warranted over the ambient temperature range of 0 to 40°C.

		PLS6003033	PLS6005020	PLS60010010	PLS6002005	PLS6004002.5
DC Output Ratings ⁽¹⁾	Voltage	30V	50V	100V	200V	400V
	Current	33A	20A	10A	5A	2.5A
	Power	600W	600W	600W	600W	600W
Output Ripple & Noise	CV p-p ⁽³⁾	60mV	60mV	60mV	60mV	60mV
	CV rms ⁽⁴⁾	20mV	20mV	20mV	20mV	20mV
Load Regulation (change from 10%-90% load)	Voltage	15mV	15mV	15mV	15mV	15mV
	Current	15mA	15mA	15mA	15mA	15mA
Line Regulation (change from 100-132 or 180-260 VAC input) ⁽⁵⁾	Voltage	15mV	15mV	15mV	15mV	15mV
	Current	15mA	15mA	15mA	15mA	15mA
Programming Accuracy ^(1,2)	Voltage 0.1%+	15mV	15mV	15mV	15mV	15mV
	Current 0.1%+	66mA	66mA	66mA	66mA	66mA
Measurement Accuracy	Voltage 0.1%+	15mV	15mV	15mV	15mV	15mV
	Current 0.1%+	60mA	60mA	60mA	60mA	60mA
Transient Recovery Time ⁽⁵⁾	Time	≤1ms	≤1ms	≤1ms	≤1ms	≤1ms
Supplemental Characteristics (supplemental characteristics are not warranted but are descriptions of typical performance determined either by design or type testing)						
Output Response Time (settle to within ±1% of the rated output, with resistive load)	Up, Full Load	0.08s	0.08s	0.08s	0.08s	0.08s
	Down, Full Load	0.08s	0.08s	0.08s	0.08s	0.08s
	Down, No Load	0.5s	0.5s	0.5s	0.5s	0.5s
Command Response Time ⁽⁶⁾	Time	50ms	50ms	50ms	50ms	50ms
Data Readback Transfer Time ⁽⁷⁾	Time	5ms	5ms	5ms	5ms	5ms
Remote Sense Compensation	Volts/Load Lead	1V	1V	2V	4V	4V
Over-voltage Protection	Range	0.5-33V	0.5-55V	0.5-110V	0.5-220V	0.5-440V
	Accuracy	0.3V	0.5V	1V	2V	4V
Output Ripple & Noise ⁽³⁾	CC rms	7mA	5mA	5mA	5mA	10mA
Programming Resolution Measurement Resolution	Voltage 0.05%+	10mV	25mV	50mV	100mV	200mV
	Current 0.05%+	20mA	20mA	10mA	5mA	2.5mA
Front Panel Display Accuracy	Voltage 0.1%+	10mV	25mV	50mV	100mV	200mV
	Current 0.1%+	33mA	20mA	10mA	5mA	2.5mA

1. Minimum voltage is guaranteed at greater than 1% of the rated output voltage.
2. Minimum current is guaranteed at greater than 1% of the rated output current.
3. Measured with 20MHz bandwidth and excluding line frequency ripple.
4. Line frequency ripple measured with 20MHz bandwidth.
5. Time for output voltage to recover within 0.5% of its rated output for a load change from 10 to 90% of its rated output current.
6. Add this to the output response time to obtain the total programming time.
7. Time to provide data back to the controller using LAN interface (does not include A/D conversion time).

Supplemental Characteristics for all Models

DC output terminals

Negative output terminal (CN5)

Standard safety banana jack.

Positive output terminal (CN6)

Standard safety banana jack.

Analog connection

Analog connector (CN3)

See connection table.

Analog programming output voltage and current

Input signal

Selectable; 0 to 3V, 0 to 5V or 0 to 10V full scale

Input impedance

0 to 10k Ω full scale

Interfaces

GPIB

SCPI – 1993, IEEE 488.2 compliant interface

USB 2.0 (CN2)

10/100 LAN (CN1)

Web server

Built-in Web server requires Internet Explorer 5+ or Firefox, or Chrome

AC input

Input connector

IEC Inlet (CN4)

Input range

90 – 265VAC; 50/60Hz

Input current

7.5A @ 100VAC nominal

4A @ 200VAC nominal

Power factor

>0.95 at nominal input and rated output power

Efficiency

76% – 85% for 600W units at full power out

Inrush current

<20A for 600W units

Regulatory compliance

EMC

European EMC directive 89/336/EEC for Class A products.

This ISM device complies with Canadian ICES-001.

Safety

European Low Voltage Directive IEC60950-1 and IEC62368-1

US and Canadian safety standards

Any LEDs used in this product are Class 1 as per IEC 825-1

Acoustic noise declaration

Emission directive: Sound pressure L_p <70dB(A),

At operator position,

*Normal operation,

*According to EN 27779 (Type Test).

Environmental conditions

Environment

Indoor use, installation category II (AC input), pollution degree 2

Operating temperature

0°C to 40°C @ 100% load

Storage temperature

-20°C to 70°C

Operating humidity

30% to 90% relative humidity (no condensation)

Storage humidity

10% to 95% relative humidity (no condensation)

Altitude

Up to 3000m. Derate the output current by 2%/100m above 2000m.

Dimensions

Excluding connectors, rotary controls and feet.

Height

1.73in (44mm)

Width

8.82in (224mm)

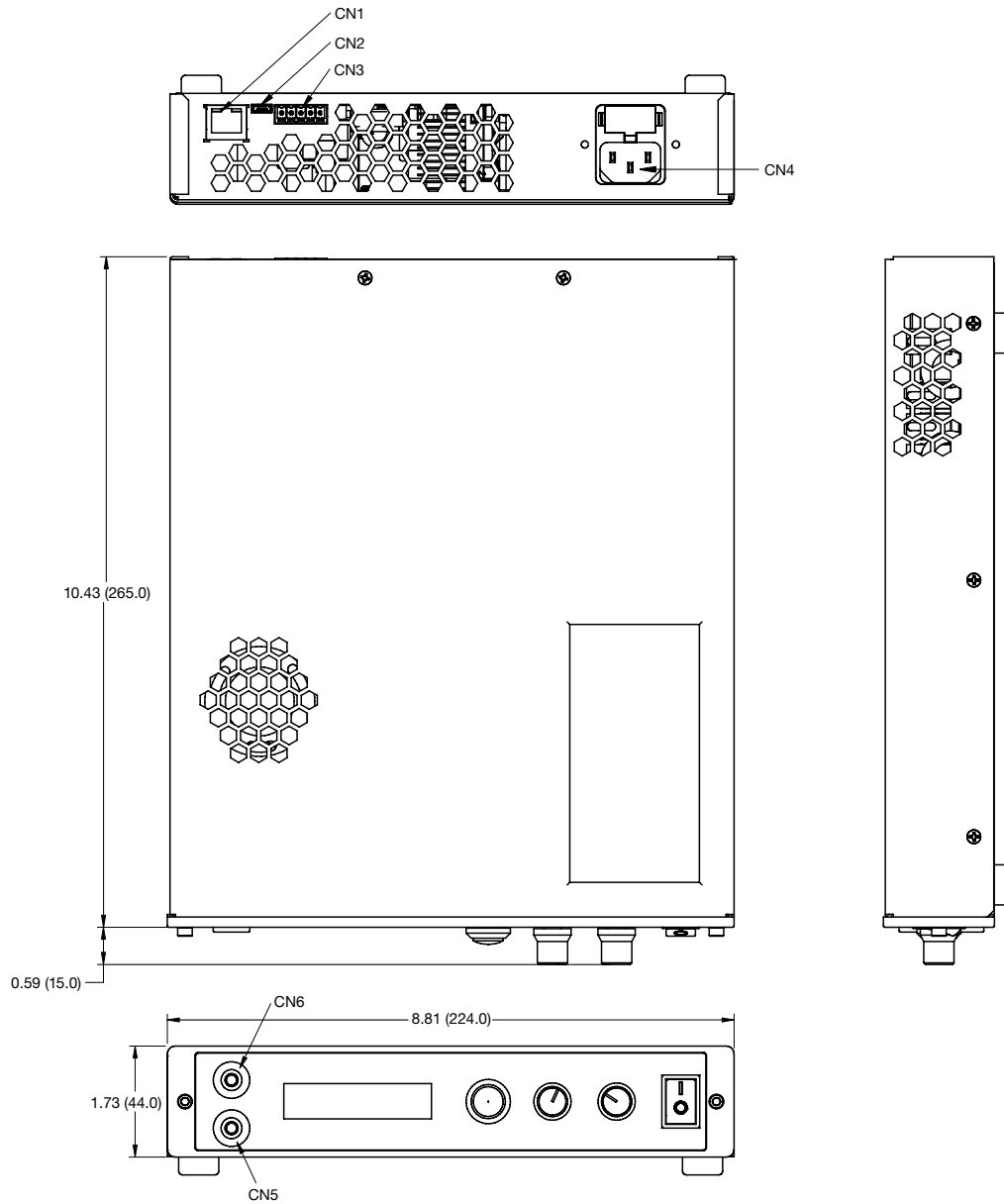
Depth

10.3in (262mm)

Weight

2.7kg (6.0lbs.)

Mechanical Details



CN3 Analog Connector Connections	
Pin	Function
1	3.0V Reference
2	Ground
3	Voltage Control Input
4	Current Control Input
5	Sharing Output