



PLS600 Datasheet

Product Summary

The PLS600 is a programmable DC power supply with 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.

Features

Output Voltage & Current

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

(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 of the knob 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).

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	30 V	50 V	100 V	200 V	400 V
	Current	33 A	20 A	10 A	5 A	2.5 A
	Power	600 W	600 W	600 W	600 W	600 W
Output Ripple & Noise	CV p-p ³	60 mV	100 mV	100 mV	100 mV	200 mV
	CV rms ⁴	20 mV	100 mV	150 mV	150 mV	50 mV
Load Regulation (change from 10%-90% load)	Voltage	15 mV	25 mV	50 mV	100 mV	200 mV
	Current	15 mV	15 mV	15 mA	15 mA	15 mA
Line Regulation (change from 100-132 VAC input or 180-260 VAC input) ⁽⁵⁾	Voltage	15 mV	25 mV	50 mV	100 mV	200 mV
	Current	15 mV	15 mV	15 mA	15 mA	15 mA
Programming Accuracy ^(1,2)	Voltage 0.1%+	15 mV	25 mV	50 mV	100 mV	200 mV
	Current 0.1%+	66 mA	40 mA	20 mA	10 mA	5 mA
Measurement Accuracy	Voltage 0.1%+	15 mV	25 mV	50 mV	100 mV	200 mV
	Current 0.1%+	60 mA	40 mA	15 mA	10 mA	5 mA
Transient Recovery Time ⁽⁵⁾	Time	≤1 ms	≤1 ms	≤1 ms	≤1 ms	≤1 ms
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	0.08 s	0.08 s	0.08 s	0.08 s	0.08 s
	Down, Full Load	0.08 s	0.08 s	0.08 s	0.08 s	0.08 s
	Down, No Load	0.5 s	0.5 s	0.5 s	0.5 s	0.5 s
Command Response Time ⁽⁷⁾	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms
Data Readback Transfer Time ⁽⁸⁾	5 ms	5 ms	5 ms	5 ms	5 ms	5 ms
Remote Sense Compensation	Volts/Load Lead	1 V	1 V	2 V	4 V	4 V
Over-voltage Protection	Range	0.5-33 V	0.5-55 V	0.5-110 V	0.5-220 V	0.5-440 V
	Accuracy	0.3 V	0.5 V	1 V	2 V	4 V
Output Ripple & Noise ⁽³⁾	CC rms	7 mA	5 mA	5 mA	5 mA	10 mA
Programming Resolution Measurement Resolution	Voltage 0.05%+	10 mV	25 mV	50 mV	100 mV	200 mV
	Current 0.05%+	20 mA	20 mA	10 mA	5 mA	2.5 mA
Front Panel Display Accuracy	Voltage 0.1%+	10 mV	25 mV	50 mV	100 mV	200 mV
	Current 0.1%+	33 mA	20 mA	10 mA	5 mA	2.5 mA

Notes:

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 20 MHz bandwidth and excluding line frequency ripple
4. Line frequency ripple measured with 20 MHz 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. Voltage set point from 10% to 100% of rated output
7. Add this to the output response time to obtain the total programming time
8. Time to provide data back to the controller using LAN interface (does not include A/D conversion time)

Supplemental Characteristics for all Model Numbers

Series and parallel capability

Parallel operation

Up to 4 units can be connected in master/slave mode

Series operation

Up to 2 units can be connected in series

Output terminal isolation

No output terminal may be more than 600 VDC from any other terminal or chassis ground

Analog programming output voltage and current

Input signal

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

Input impedance

0 to 10 k Ω full scale

Interface capabilities

GPIO

SCPI – 1993, IEEE 488.2 compliant interface

USB 2.0

10/100 LAN

Web server

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

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

Altitude

Derate the maximum ambient temperature by 1 °C/100 m above 2000 m.

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 IEC 60950

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 <70 dB(A),

At operator position,

*Normal operation,

*According to EN 27779 (Type Test).

AC input

Nominal input

100 – 240 VAC; 50/60 Hz

Input current

7.5 A @ 100 VAC nominal;

4 A @ 200 VAC nominal

Input range

90 – 265 VAC; 47 – 63 Hz.

Power factor

>0.95 at nominal input and rated output power

Efficiency

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

Inrush current

<20 A for 600 W units;

Dimensions

(excluding connectors, control knobs and feet.

Height 44 mm (1.73 in)

Width 224 mm (8.82 in)

Depth 262 mm (10.3in)

Weight

2.7Kg (6.0 lbs.)

Specifications subject to change without notice.