



© Artisan Technology Group

**Limited Availability
Used and in Excellent Condition**

Open Web Page

<https://www.artisanng.com/59206-9>

All trademarks, brandnames, and brands appearing herein are the property of their respective owners.



Your **definitive** source
for quality pre-owned
equipment.

Artisan Technology Group

(217) 352-9330 | sales@artisanng.com | artisanng.com

- Critical and expedited services
- In stock / Ready-to-ship

- We buy your excess, underutilized, and idle equipment
- Full-service, independent repair center

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

SECTION I

GENERAL DESCRIPTION

1.1 INTRODUCTION

This instruction manual contains information on the installation, operation, calibration and maintenance of the California Instruments XP Series AC Power Sources Model 321XP, 651XP, 971XP and 1301XP.

1.2 SPECIFICATIONS

Table 1-1 contains the operating specifications for XP Series power sources. All specifications are tested in accordance with standard California Instruments test procedures and apply with a stable, low distortion input signal as generated by any XP-series oscillator/power controller. The following specifications apply for operation from 78% to 100% of full scale output voltage.

TABLE 1-1 SPECIFICATIONS
XP-SERIES POWER SOURCE

MODEL	321XP	651XP	971XP	1301XP
MAXIMUM OUTPUT POWER, VA				
@ TA=25 degrees C, 77.8% of Range 0.7 Power Factor	325	650	975	1,300
@ TA=25 degrees C, 100% of Range 0.7 Power Factor	419	836	1,252	1,671
@ TA=55 degrees C, 77.8% of Range 0.7 Power Factor	250	500	750	1,000
@ TA=55 degrees C, 100% of Range 0.7 Power Factor	321	642	964	1,285
MAXIMUM OUTPUT CURRENT, Arms				
@ TA=25 degrees C				
67.5 Volt Range	6.19	12.38	18.56	24.76
135 Volt Range	3.10	6.19	9.28	12.38
270 Volt Range	1.55	3.10	4.64	6.19
@ TA=55 degrees C				
67.5 Volt Range	4.76	9.52	14.28	19.04
135 Volt Range	2.38	4.76	7.14	9.52
270 Volt Range	1.19	2.38	3.57	4.76

OUTPUT VOLTAGE RANGES:	0-135 volts rms 0-270 volts rms								
OPTIONAL:	0-67.5 volts rms 0-135 volts rms								
	Voltage range selectable by front panel range key or via IEEE-488 bus when used with the XP-series programmable oscillators/AC power controllers.								
LOAD REGULATION:	$\pm 1\%$ over the range from 45 Hz to 5 KHz when tested at unity power factor.								
TOTAL HARMONIC DISTORTION:	Less than 0.5% from 45 Hz to 5 KHz.								
LINE REGULATION:	$\pm 0.1\%$ of full output for a $\pm 10\%$ line change.								
AMPLITUDE STABILITY:	$\pm 0.25\%$ for 24 hours at constant line, load and ambient temperature.								
FULL POWER FREQUENCY RANGE:	45 Hz to 5 KHz (Optional 15 Hz at derated power, 33% voltage and 30% power).								
FREQUENCY RESPONSE:	$\pm 0.5\text{dB}$ 45 Hz to 5 KHz.								
PHASE MATCHING: (Between identical power source models)	± 1.5 degrees 45 to 2KHz. $\pm .5$ degree/KHz. Does not include phase inaccuracy of oscillator drive signals.								
EFFICIENCY:	<table border="0"> <tr> <td>321XP</td> <td>651XP</td> <td>971XP</td> <td>1301XP</td> </tr> <tr> <td>43%</td> <td>52%</td> <td>55%</td> <td>53%</td> </tr> </table> at full power out at 135V at unity power factor	321XP	651XP	971XP	1301XP	43%	52%	55%	53%
321XP	651XP	971XP	1301XP						
43%	52%	55%	53%						
AC NOISE LEVEL:	70dB rms below full rms output with shorted input. 60dB below full peak-to-peak output with shorted input. 50dB below full peak-to-peak output at full rated power output.								

OVERLOAD/SHORT CIRCUIT
OVERPOWER PROTECTION:

A fault resulting from overloading, short circuit or overpower condition will cause an "OVERLOAD" indicator to illuminate on the front panel. The output voltage will then be clipped on the peaks. Clipping will be proportional to the amount of the overload.

OVERTEMPERATURE
PROTECTION:

Thermal overload resulting from excessive heatsink temperature will cause an "OVERTEMP" indicator to illuminate on the front panel and the output voltage will drop to zero.

AMPLIFIER DRIVE:
(normally obtained from
plug-in oscillator through
Power Monitor)

5 volts rms (typical) produces full scale output.

PROGRAMMABLE CURRENT
LIMIT OPTION:

Current Limit programming is in peak amperes. The accuracy is $\pm 5\%$ of programmed value from 10% to 100% of rated output.

AC MAINS INPUT:

Models 321XP and 651XP normally wired for 103 to 135 VAC.
Models 971XP and 1301XP normally wired for 180 to 253 VAC.

The AC INPUT may be rewired for any of the three input ranges, 103 to 135 VAC, 180 to 253 VAC or 207 to 270 VAC. NOTE: When rewired the AC input check Table 2-3 for the correct circuit breaker.

AC MAINS FREQUENCY:

48 Hz to 65 Hz.

OPERATING TEMPERATURE RANGE:

0 to 55 degrees C.

STORAGE TEMPERATURE RANGE:

-25 degrees to 85 degrees C.

ACOUSTIC NOISE:

Less than 60 dB maximum when mounted in equipment rack measured three feet from front center, "A" weighted scale.

FRONT PANEL METER:
(For Power Monitor
specifications, refer
to applicable Power
Monitor Instruction
Manual)

Monitors output voltage or load
current.

Resolution is 1 volt or 0.1 ampere.

With "kiloWatts" option resolution
is 10 watts.

FRONT PANEL INDICATORS:

"POWER ON"

"RANGE"

"OVERLOAD"

"OVERTEMP"

FRONT PANEL CONTROLS:

Amplifier:

Main Circuit Breaker

Power Monitor:

Range; IMB, IMC

Volts; IMB, IMC

Amp; IMB, IMC

KiloWatt; IMC

INPUT/OUTPUT CONNECTORS:

AC MAINS INPUT provided on rear
mounted terminal block, Kulka 9-85-
3.

Output provided on rear mounted
terminal block, Kulka 9-85-3.

Output provided on rear mounted
terminal block, Kulka 9-85-3.

Output provided on rear mounted
terminal block, Kulka 9-85-3.

Output provided on rear mounted
terminal block, Kulka 9-85-3.

Servo Sense inputs for individual
phases provided on Amp cap 1-
480701-0 w/Amp Socket Contact
350689-1. The mating connector is
Amp plug 1-480700-0 w/Amp contact
pin 350547-1.

Interfacing in a multi-phase system
is provided with the California
Instrument cable assembly 4000-427.
The power source connector is Amp
552118-1. The mating connector is
Amphenol 57-20500-15.

INPUT/OUTPUT CONNECTORS:
(continued)

Oscillator/Control signals for
programmable oscillators are
provided on rear mounted IEEE-488
(GPIB) connector 3M 3549-1000.

DIMENSIONS:
(in inches)

1301XP - 19W - 22D - 7.00H
971XP - 19W - 22D - 7.00H
651XP - 19W - 22D - 5.25H
321XP - 19W - 22D - 5.25H

NET WEIGHT:

1301XP 103 Pounds
971XP 92 Pounds
651XP 78 Pounds
321XP 59 Pounds

SHIPPING WEIGHT:

1301XP 131 Pounds
971XP 128 Pounds
651XP 114 Pounds
321XP 93 Pounds

FRONT PANEL FINISH:

Gray, 26440 per federal standard
595 with black silk-screened
lettering.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at [artisanng.com](https://www.artisanng.com) for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisanng.com | [artisanng.com](https://www.artisanng.com)

