

**NEW**

# X-ray HV Power Supply

## Anode ground type

# XPg series

— Switching power supply —

Output Voltage: -160kV to -30kV

Output Power: 600W to 4000W



\* X-ray tube is separate item.



- Low ripple and high stability
- Integrated Floating AC Filament Supply
- Maximum 3kW and 4kW output power models are also available.

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XPg Series is high stability and low ripple negative X-ray power supply with floating AC filament supply and generates stable X-ray output. Interlock and useful function are installed for safer and convenient operation. With combination with digital controller CO/USB series, control via GPIB, RS-232C, RS-485 and USB is available.

## FEATURES

- HV power supply designed for XRD, XRF and X-ray tube
- Maximum 3 kW and 4 kW output power models are also available.
- For Anode ground type X-ray tube
- Integrated Floating AC Filament Supply
- Low ripple and high stability
- Digital interface
- Constant Voltage/Current operation with full protection for safety operation

## APPLICATIONS

- X-ray non-destructive inspection
- XRD (X-ray Diffraction)
- XRF (X-ray Fluorescence Analysis)

## LINE UP

Output Voltage	Output Current	Output Power	Model
-30 kV	20 mA	600 W	XPg-30N20
	40 mA	1200 W	XPg-30N40
-40 kV	15 mA	600 W	XPg-40N15
	30 mA	1200 W	XPg-40N30
-50 kV	12 mA	600 W	XPg-50N12
	24 mA	1200 W	XPg-50N24
-60 kV	10 mA	600 W	XPg-60N10
	20 mA	1200 W	XPg-60N20
	50 mA	3000 W	XPg-60N50
	67 mA	4000 W	XPg-60N67
-100 kV	6 mA	600 W	XPg-100N6
	10 mA	1000 W	XPg-100N10
-160 kV	4 mA	640 W	XPg-160N4

## SPECIFICATIONS

### Input Voltage /Current

Output Power	Input Voltage	single phase		three phase
		100 Vac * to 120 Vac	200 Vac to 240 Vac	200 Vac * to 220 Vac
600 W - 640 W		13 A	6.5 A	—
1000 W		—	11.5 A	—
1200 W		—	13 A	—
3000 W		—	20 A	11 A
4000 W		—	25 A	15 A

\*option

### Output Control

(Local mode)  
Voltage: front panel 10-turn potentiometer  
Current: front panel 10-turn potentiometer  
(Remote mode)  
Voltage: external voltage source (Vcon) 0 Vdc to 10 Vdc (input impedance greater than 1 MΩ) or by external 5 kΩ potentiometer  
Current: external voltage source (Icon) 0 Vdc to 10 Vdc (input impedance greater than 1 MΩ) or by external 5 kΩ potentiometer

### Voltage Regulation

Line:  $\pm 0.005\%$  of maximum voltage for  $\pm 10\%$  input line change  
Load: 0.005% of maximum voltage for full load change

### Current Regulation

Line:  $\pm 0.05\%$  for  $\pm 10\%$  input line change  
Load: 0.05%  $\pm 100 \mu\text{A}$  of output voltage change from 10% to 100%

### Ripple

Less than 0.03%rms (below 1 kHz)  
Less than 0.7%rms (over 1 kHz)

### Stability

0.01%/8 Hr

### Temperature Coef.

50 ppm/°C

### Filament

12 V/5 A AC  
stand-by 0.5 A  
Filament limit is variable with 10-turn potentiometer on rear panel

### Metering

Output voltage: 3.5-digit digital meter -1999  
Output current: 3.5-digit digital meter 1999

### Monitor Output

Voltage monitor: 0 V to 10 V (output impedance 1 kΩ typ.)  
Current monitor: 0 V to 10 V (output impedance 1 kΩ typ.)

### Protections

Protection against over voltage, over current, output short circuit, Filament protection, arc and over temperature.  
Disable HV output after AC power line recovery.

### Other Functions

Remote ON/OFF switch (outside relay)  
Interlock (outside relay)  
Output status signal (inside relay)

### Output Connector

30 kV to 60 kV: Federal Standard 75 kV 3-pin  
100 kV, 160 kV: European Standard R24

### Temperature

Operating: 0°C to +40°C, Storage: -20°C to +70°C

### Relative humidity

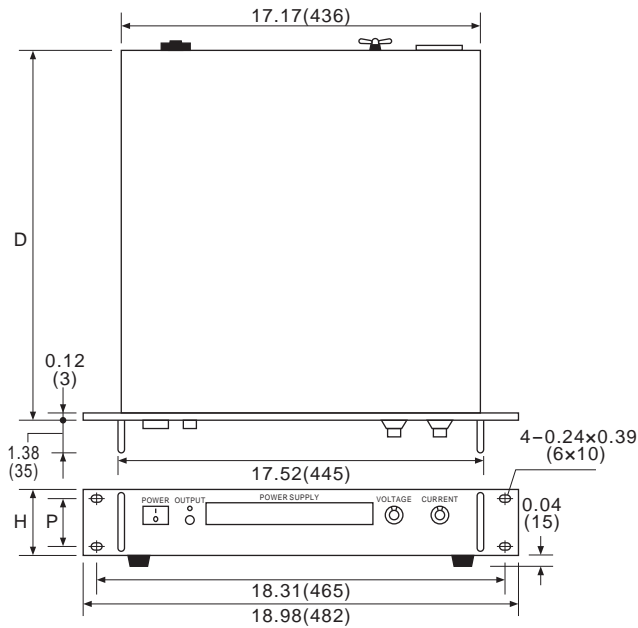
20% to 80%, non condensing

### Accessories

AC line input cable 2.5 m (flying lead) (1) (It is not included in 3kW and 4kW models)  
Instruction Manual (1)

★ These specifications are at the maximum rated output after a 2Hr warm-up period unless otherwise specified.

## DIMENSIONS inch (mm)



MODEL	Standard (EIA)		D
	H	P	
XPg-30N20	5.24 (133)	2.25 (57.2)	18.98 (482)
XPg-30N40			
XPg-40N15			
XPg-40N30			
XPg-50N12			
XPg-50N24			
XPg-60N10	5.24 (133)	2.25 (57.2)	21.65 (550)
XPg-60N20			
XPg-60N50	6.97 (177)	4 (101.6)	24.02 (610)
XPg-100N10			
XPg-160N4			

## OPTIONS

- L(100V) 100 Vac to 120 Vac single phase (only for 600 W model and 640 W model)
- L(200V3P) 200 Vac three phase (only for 3000 W and 4000 W model)
- LDf Dual filament (Large focus spot, small focus spot is selectable)
- LT1 Interlock remote reset, AC line remote reset (recovery from HV disable status)

**CNF-75-3P(5)** HV output cable for 30 kV to 60 kV (Federal Standard 75 kV 3-pin plugs on both end 5 meters)

**CNF-75-3P(10)** HV output cable for 30 kV to 60 kV (Federal Standard 75 kV 3-pin plugs on both end 10 meters)

**CNXP-160-3P(5)** 100 kV, 160 kV HV output cable (European Standard R24 plugs on both end 5 meters)

**CNXP-160-3P(10)** 100 kV, 160 kV HV output cable (European Standard R24 plugs on both end 10 meters)

★ Add L mark to the model number when ordering. [e.g.] **XPg-30N20-LdF with CNF-75-3P(5)** Option code is ordered alphabetically and by input voltage value.

## Connection with X-ray tube

Below diagram shows the connection of power supply and X-ray tube.

[Standard type]

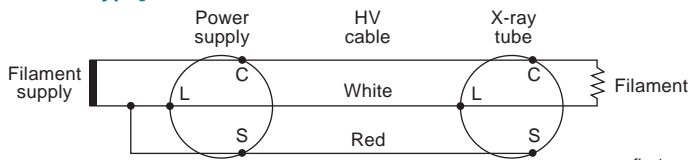


fig.1

OR

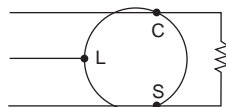
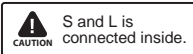
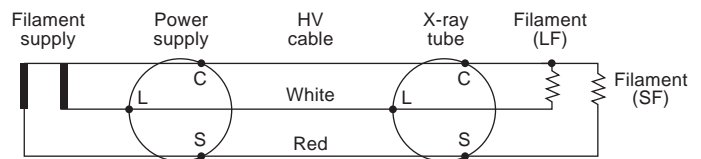


fig.2



Contact to sales in advance if X-ray tube with C and S of fig.1 or C and L of fig.2 is shorted is used.

[-LDf option (Dual filament) type]



\*Wrong connection could cause failure or malfunction.  
Make sure the filament connection with your X-ray tube when ordering.



## Digital Controller CO/USB series

Interface: GPIB/RS-232C/RS-485/USB

The CO/USB series is a line of adapters used to digitally control Matsusada's High Voltage, DC, and AC power supplies via personal computer.

It is ideally suited to building safe, stable, versatile and highly accurate automatic inspection and measurement systems, saving your time and cutting labor costs.

And, the fiber optic connection secures electrical isolation, resulting in safer operation even when combined with power supplies of different potentials.

▶ High resolution 16-bit (1/65535)

▶ Thorough measures against noises

▶ Complete isolation by fiber optic cable

▶ Listner/Talker function

For more information, please refer to CO/USB series catalog.



USA/Canada : +1-888-652-8651  
other countries : +81-6-6150-5089

# Customer Inquiry Sheet (XPg series)

Please copy this page and above fax number after filling out form below.

☐ I would like

- ☐ A quotation    ☐ An explanation of product    ☐ A demonstration    ☐ To purchase
- ☐ Other ( )

■ Give us your requirement / comment

■ Please fill in below.

Address:	
Company:	
Dept.:	Title:
Name:	
Tel:	Fax:
E-mail:	

### Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the "Products") are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply products in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A "Return Merchandise Authorization" is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion repair or replace such defective products at no cost to the purchaser. We assume no liability to the purchaser or any third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products are not designed and produced for such applications as requiring extremely high reliability and safety, or involving human lives (such as nuclear power, aerospace, social infrastructure facility, medical equipment, etc.). The use under such environment is not covered by this warranty and may require additional design and manufacturing processes. No modification or supplement of this warranty shall be binding unless in writing and signed by a duly authorized officer of Matsusada. Matsusada reserves the right to make any changes in the contents of catalogs or specifications at any time without advance notice. Due to compelling reason such as unavailability of components used, products might be unavailable or unable to repair. The products specified in catalogs or specifications are designed for use by the person who has enough expertise or under the control of such person, and not for general consumers. Schematics of products shall not be submitted to users. Test result or test data for the products shall be available upon request with charge.

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog.

PLEASE SEE THE LINK BELOW FOR THE COMPLETE WARRANTY TERMS

<https://www.matsusada.com/site/warranty.html>

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