High Voltage Power Supply for X-ray tube

XPgM / XKgM series
(for Anode GND type) (for Cathode GND type)

- Low Ripple
- High Stability
- Digital interface

www.matsusada.com
**X-ray Power Supply Module**

**XPgM / XKgM series**

**NEW**

**FEATURES**
- 300 W and 600 W output power models are available.
- Integrated filament supply
  (For Cathode ground type X-ray tube)
- Integrated Floating AC Filament Supply
  (For Anode ground type X-ray tube)
- Low ripple and high stability
- Digital interface

**SUMMARY**
XPgM / XKgM Series is an X-ray power supply which achieves high stability while maintaining low ripple with an integrated filament supply that generates stable X-ray output. Interlock feature is one of many functions that are installed for a safer and more convenient operation. XPgM / XKgM Series can be controlled with digital controller (CO series module) via Ethernet, GPIB, RS-232C, RS-485 and USB options.

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

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**LINEUP**

<table>
<thead>
<tr>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Model For Cathode ground type X-ray tube</th>
<th>Model For Anode ground type X-ray tube</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 kV</td>
<td>6 mA</td>
<td>XKgM-50P6</td>
<td>XPgM-50N6</td>
</tr>
<tr>
<td></td>
<td>12 mA</td>
<td>XKgM-50P12</td>
<td>XPgM-50N12</td>
</tr>
<tr>
<td>60 kV</td>
<td>5 mA</td>
<td>XKgM-60P5</td>
<td>XPgM-60N5</td>
</tr>
<tr>
<td></td>
<td>10 mA</td>
<td>XKgM-60P10</td>
<td>XPgM-60N10</td>
</tr>
<tr>
<td>70 kV</td>
<td>4.3 mA</td>
<td>XKgM-70P4.3</td>
<td>XPgM-70N4.3</td>
</tr>
<tr>
<td></td>
<td>8.6 mA</td>
<td>XKgM-70P8.6</td>
<td>XPgM-70N8.6</td>
</tr>
</tbody>
</table>

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**SPECIFICATIONS**

**Input Voltage**
- 300 W: 90 to 264 VAC, 47 to 63 Hz, single phase
- 600 W: 180 to 264 VAC, 47 to 63 Hz, single phase

**Input Current**
- 300 W: 3.9 A typ. (at 115 VAC input and maximum output)
- 600 W: 3.6 A typ. (at 230 VAC input and maximum output)

**Output Control**
- Local mode: Filament limit, multi-turn potentiometer
- Remote mode: Voltage external voltage source (Vcon) 0 Vdc to 10 Vdc (input impedance greater than 1 MΩ)
- Current external voltage source (Icon) 0 Vdc to 10 Vdc (input impedance greater than 1 MΩ)
- Filament limit external voltage source 0 Vdc to 10 Vdc (input impedance greater than 1 MΩ)
- Filament preheat external voltage source 0 Vdc to 10 Vdc (input impedance greater than 1 MΩ)

**Voltage Regulation**
- Line: ±0.01 % of maximum voltage for ±10 % input line change
- Load: 0.01 % of maximum voltage for full load change

**Current Regulation**
- Line: ±0.01 % of maximum current for ±10 % input line change
- Load: 0.01 % of maximum current for 30 % to 100 % output voltage change

**Ripple**
- Less than 0.07 % rms (below 1 kHz)
- Less than 0.7 % rms (over 1 kHz)

**Stability**
- 25 ppm / Hr (After a 2-Hr warm-up)

**Temperature Coef.**
- 50 ppm / °C

**Filament**
- XKgM: 5 A 10 V DC (Referenced to ground)
- XPgM: 5 A 10 V AC (Referenced to negative high output voltage)

**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.)
- Filament current monitor: 0 V to 5 V / 0 A to 5 A (output impedance 1 kΩ typ.)

**Other Functions**
- Remote ON / OFF switch (outside relay)
- AC Power fault status signal
- Output status signal (inside relay)

**Output Connector**
- XKgM: Matsusada original connector
- XPgM: Claymount Mini Federal Standard

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

**Humidity**
- 20 % to 80 % RH (no condensation)

**Accessories**
- AC input cable 2.5 m (1)
- Shielded HV output cable 2.5 m flying lead (XKgM only) (1)
- Instruction Manual (1)

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

**XKgM series**

**[Front view]**

**[Side view]**

**[Bottom view]**

**XPgM series**

**[Front view]**

**[Side view]**

**[Bottom view]**

**OPTION**

- **LET** Ethernet interface board
Customer Inquiry Sheet (XPgM / XKgM 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 un available 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

http://www.matsusada.com/site/warranty.html