

XRM / XRF SERIES

AC-INPUT MODULAR HIGH VOLTAGE POWER SUPPLIES

Compact AC-input supplies for regulated high voltage and low-power X-ray systems. XRM provides voltage and current control; XRF adds emission and filament controls for integrated X-ray tube operation.



1.5-60 kV

XRM OUTPUT RANGE

30-60 kV

XRF OUTPUT RANGE

60 / 100 W

POWER CLASSES

0-10 V

REMOTE CONTROL

KEY CAPABILITIES

- Local or remote voltage and current control
- Constant-voltage / constant-current regulation
- Voltage and current monitoring
- External interlock and arc/short protection
- XRF emission, filament, and X-ray enable controls

TYPICAL APPLICATIONS

- X-ray systems
- CRT and projection systems
- Photomultiplier bias
- Capacitor charging
- Integrated low-power X-ray tube control

STANDARD MODEL GUIDE

Model	Output voltage	60 W current	100 W current
XRM 1.5	0-1.5 kV	40 mA	66 mA
XRM 3	0-3 kV	20 mA	33 mA
XRM 5	0-5 kV	12 mA	20 mA
XRM 10	0-10 kV	6 mA	10 mA
XRM 15	0-15 kV	4 mA	6.6 mA
XRM 20	0-20 kV	3 mA	5 mA
XRM 30 / XRF30	0-30 kV	2 mA	3.3 mA
XRM 40 / XRF40	0-40 kV	1.5 mA	2.5 mA
XRM 50 / XRF50	0-50 kV	1.2 mA	2 mA
XRM 60 / XRF60	0-60 kV	1 mA	1.67 mA

Select XRM for general regulated high voltage or XRF for integrated X-ray tube operation. Choose the output voltage and 60 W or 100 W power class; add P or N to XRM model numbers for polarity. Contact Gamma with XRF tube voltage, current, and filament requirements.



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1.5-60 kV | 60 OR 100 W

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ELECTRICAL CHARACTERISTICS

Input	105-125 VAC, 50-400 Hz standard through IEC 320-14 inlet; 195-245 VAC and 24 VDC +/-10% versions available
Output voltage	Continuously adjustable from zero to rated maximum
Power	60 W or 100 W
Voltage regulation	Line +/-0.005%; load +/-0.01%
Current regulation	XRM: better than +/-0.005% over the specified input range; XRF emission current: +/-0.05% of specified range
Load regulation	XRM: better than 50 uA for a 75% change in compliance voltage
Ripple	0.05%
Temp. coefficient	100 ppm/deg C from 0 to 60 deg C
Stability	0.01% per hour; 0.003% per 8 hours

INTEGRATION AND CONTROL

- 0-10 V local or remote kV programming
- 0-10 V local or remote current programming
- XRM voltage/current monitors and HV interlock
- XRF adds emission and filament programming/monitoring
- XRF includes X-ray ON/OFF and optional TTL enable
- Factory-set kV ramp available on XRF

PHYSICAL AND ENVIRONMENTAL

Dimensions	6.157 H x 4.625 W x 11 L in
Weight	XRM 10 lb; XRF 11 lb
Program I/O	15-pin XRM or 25-pin XRF D-subminiature
HV output	Re-entrant bushing with mating shielded cable; customer-specified connector available
Packaging	Modular enclosure with silicone-encapsulated high voltage section
XRF filament	TB1 output adjustable from 0 to 3.5 VDC and zero to rated current; up to 12 W standard

CONFIGURATION NOTES

- Positive or negative XRM polarity; add P or N suffix
- 195-245 VAC or 24 VDC input versions
- TTL-compatible enable
- Customer-specified high voltage connector
- XRF filament voltage and current selected for the tube
- Factory-set XRF high voltage ramp
- RoHS-compliant version available
- Higher-voltage and custom configurations available

Configuration support
Choose the voltage, power, polarity, connector, cable, and control options for your application. Gamma can help identify the best configuration for your system.

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Get in touch

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CONTROL INTERFACES

XRM models use a 15-pin J1 control connector. XRF models use a 25-pin J1 connector with additional emission and filament functions.

XRM J1 - 15-PIN D-SUBMINIATURE

Pin	Function
1	Current program
2	Voltage program
3	TTL enable - option
4	Current monitor
5	Internal voltage control
6	High voltage interlock
7	Voltage monitor
8	Voltage meter - 1 mA full scale
9	Internal current control
10	Reference voltage
11-14	Signal common
15	Current meter - 1 mA full scale

XRF J1 - 25-PIN D-SUBMINIATURE

Pin	Function
1	Current program
2	Voltage program
3	TTL enable - option
4	Current monitor
5	Internal voltage control
6	High voltage interlock
7	Voltage monitor
8	Voltage meter - 1 mA full scale
9	Internal current control
10	Reference voltage output
11-14	Signal common
15	Current meter - 1 mA full scale
16	Filament voltage meter
17	Filament voltage monitor
18	Internal emission adjustment
19	X-ray ON/OFF
20-21	Signal common
22	Filament current monitor
23	Filament current meter
24	Filament current program
25	Emission-current program

PROGRAMMING AND XRF TUBE CONTROLS

- Local or remote 0-10 V programming provides zero-to-full-scale high voltage and output-current control.
- XRF emission current is continuously adjustable from zero to the rated maximum by local or remote control.
- XRF filament current is internally fixed or remotely programmed from 0-10 V for zero-to-rated current.
- XRF TB1 filament output is adjustable from 0 to 3.5 VDC and supports up to 12 W standard; voltage and current are selected for the tube.
- XRF provides X-ray ON/OFF control, optional TTL enable, and a factory-set high voltage ramp option.
- Electrical specifications apply after a 30-minute warm-up at maximum rated output.

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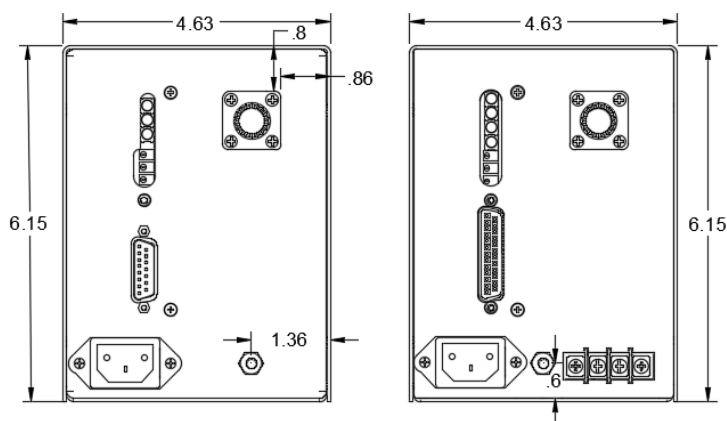
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MECHANICAL DRAWINGS

Mechanical dimensions for the standard enclosures are shown below. Dimensions are in inches unless otherwise noted. Contact Gamma for assistance selecting the enclosure and connector arrangement for your configuration.

XRM FRONT VIEW (LEFT) / XRF FRONT VIEW (RIGHT)



XRM SIDE VIEW (LEFT) / XRF SIDE VIEW (RIGHT)

