



## FEATURES

- 72W high voltage output
- 20W grounded filament
- Exceptionally compact size
- Local and Remote operation
- CE Marked to EU LV Directive 73/23/EEC
- EU RoHS Compliant to 2002/95/EC
- Safety Interlock
- High accuracy and stability

## DESCRIPTION

The Series XRG70 has been specifically developed for high performance compact X-ray applications. The combination of surface mount, superior high voltage stress control and packaging techniques ensures a compact but highly reliable product. The Series XRG70 is from the grounded filament range of products designed for grounded cathode applications. The filament is automatically controlled by the integral beam loop-control and the power stage utilises a current fed resonant push-pull converter to give high efficiency whilst ensuring reliable operation. The Series XRG70 is available with many standard options, if the version you require is not on this datasheet then please enquire as we produce many custom versions for specific requirements.

## SPECIFICATION

**Input:**  
 Input Voltage: 24VDC  $\pm 10\%$ , 5.5A max (efficiency  $\approx 75\%$ ).

**Outputs:**  
 Voltage: 0 to 60kV. Full spec applies above 3kV.  
 Current: 0 to 1.2mA.  
 Power: Maximum output power 72W.  
 Ripple: 0.05% +10V peak to peak maximum.  
 Filament: 5.5VDC 3.5A.  
 Controlled by internal beam control loop.

**Controls:**  
**Local Voltage:**  
 Internal multi-turn potentiometer for full range setting.

**Remote Voltage:**  
 0 to 10VDC. Accuracy 0.25%  $\pm 10V$ . Impedance 10Mohm.

**Local Beam Current:**  
 Internal multi-turn potentiometer for full range setting.

**Remote Beam Current:**  
 0 to 10VDC. Accuracy 0.25%  $\pm 1\mu A$ , Impedance 10Mohm.

**Local Filament Limit:**  
 Internal multi-turn potentiometer for full range setting.

**Local Filament Standby:**  
 Internal multi-turn potentiometer for full range setting.

The optional RS232 interface consists of an additional module that can be fitted to the side of the power supply system.

**Monitors:**  
 Output Voltage: 0 to 10VDC, Accuracy 0.25%  $\pm 5mV$ .  
 Beam Current: 0 to 10VDC, Accuracy 0.25%  $\pm 5mV$ .  
 Filament Current: 0 to 10VDC, Accuracy 2%  $\pm 20mV$ .

**Load Regulation:**  
 Output Voltage: 0.01%  $\pm 1V$  for a 100% change in output current.  
 Beam Current: 0.01%  $\pm 1\mu A$  for a 50% voltage change.

**Line Regulation:**  
 Output Voltage: 0.01% for a 10% input voltage change.  
 Beam Current: 0.01% for a 10% input voltage change.

**Temperature:**  
 Storage: -20 to +85°C.  
 Operating: 0 to +45°C (90% maximum humidity, non condensing, altitude 2000m max).

# Series XRG70

## X-RAY GENERATOR POWER SUPPLY



Drift: 100ppm/°C, applies to all analogue controls and monitors.  
Stability: ±0.1% over an 8 hour period after 30 minutes warm-up.

### Connectors:

Input DC Power: Twin 6.35mm (1/4 Inch) push on spade terminals.  
HV Output: HiTek Power designed detachable connector.  
Filament Output: Molex 2W Minifit 39-29-1028.

### Protection:

Input Voltage: Reverse polarity and over-current.  
HV Output: Continuous short circuit, intermittent arc and over-voltage protection.  
Filament Output: Continuous short circuit and over-voltage protection.

### Cooling:

By conduction through the mounting panel (case) and natural convection through the holes in the lid, one side panel and the rear panel.

### Safety:

This high voltage module meets the requirements of the Low voltage directive (LVD), 73/23/EEC, by complying with BSEN61010-1:2001 when it is installed as a component part of other equipment and is CE marked accordingly. An M5 earth terminal is provided which shall be connected to a safety earth at all times when the unit is operational.

### Ordering Information:

Model number: XRG70-603\*

\*Please add the required suffix to the model number:

P or N High voltage output polarity.  
(Normally positive for grounded filaments).  
F Specifies if the internal filament is required.  
X Extends the High voltage cable (to give compatibility with other products eg MH60, and a greater range of X-ray tubes).  
C RS232 Computer control, (Hardwired and Fibre Optic).  
U USB and Ethernet.

### Examples:

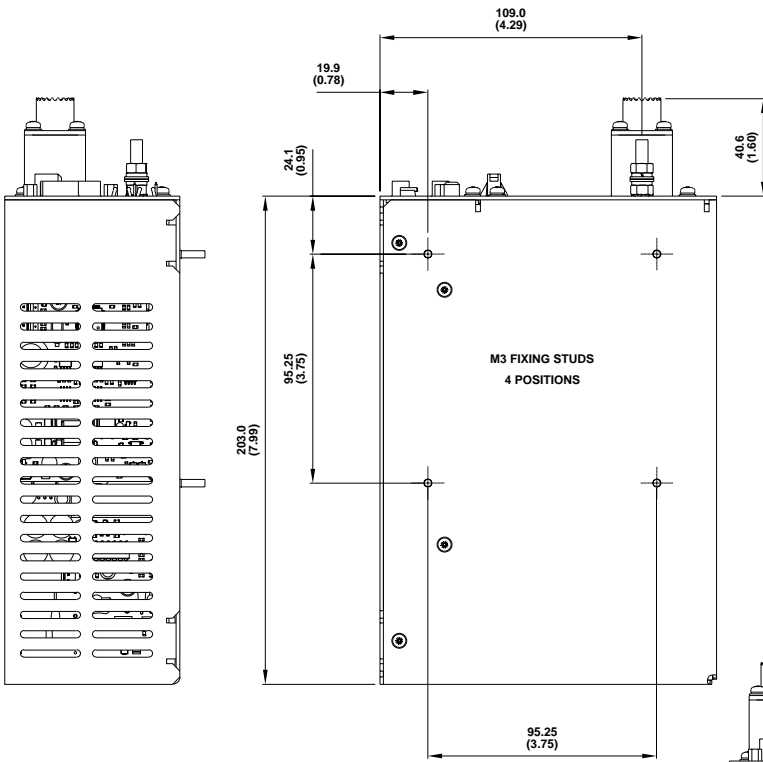
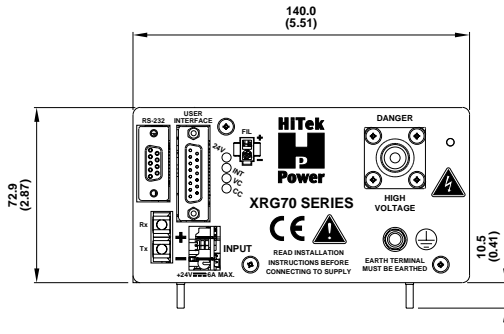
XRG70-603N Negative output.  
XRG70-603PFC Positive with filament and RS232.  
XRG70-603PFXC Positive with filament, extended cable and RS232.

### Mechanical:

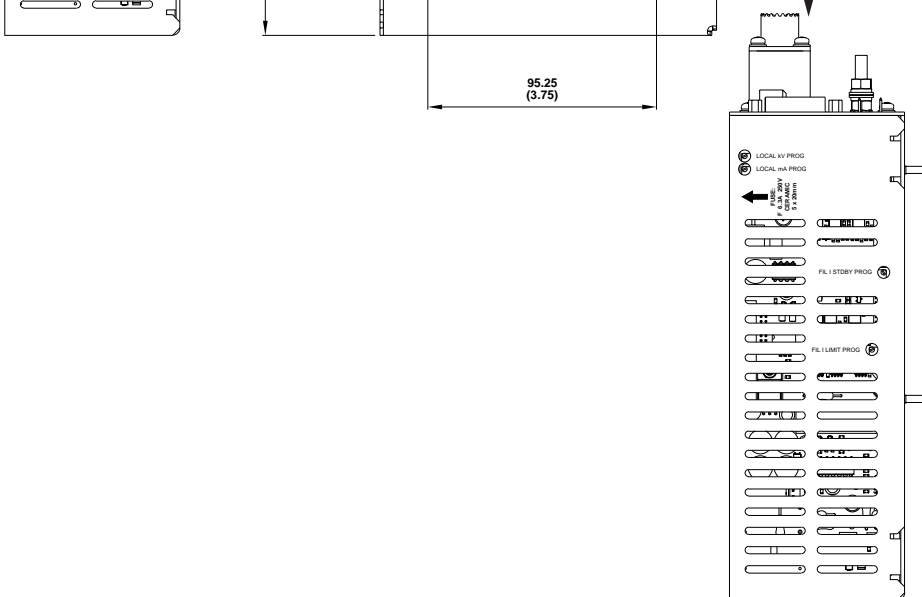
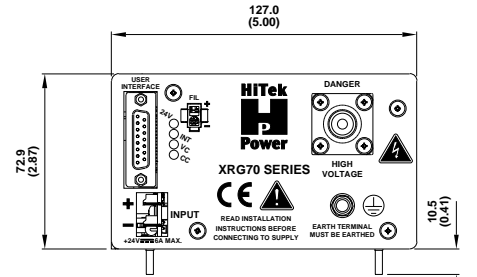
XRG70-603PF 127mm Wide, 72.9mm High, 203mm Deep  
XRG70-603PFX 127mm Wide, 72.9mm High, 228mm Deep  
XRG70-603PFXC 140mm Wide, 72.9mm High, 228mm Deep  
Weight: 3kg

These component power supplies meet the requirements of EC Directive 73/23/EEC (LVD)

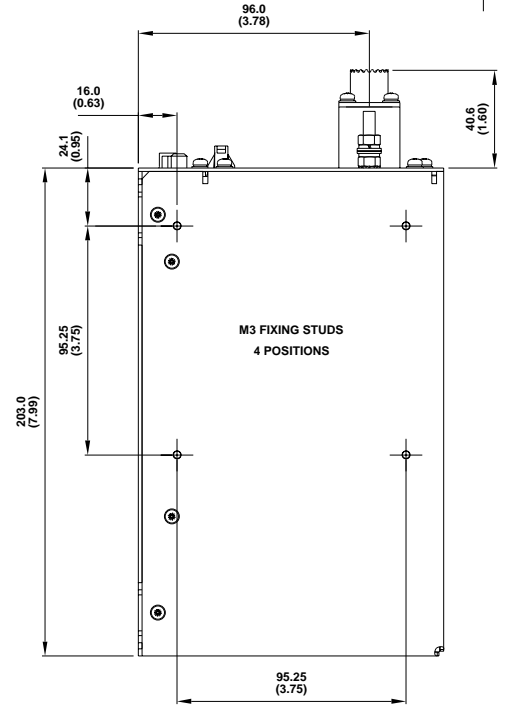
**RS232 Interface Option**



PLEASE NOTE OUTLINE SHOWS DIMENSIONS FOR THE 'X' OPTION WHICH INCREASES THE CONNECTOR LENGTH BY 25.4mm.



**Analogue Option**



**Drawing dimensions are in mm (inches)**  
Design developments may result in specification changes

# HiTek



# Power

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