XRB201 MONOBLOCK® 160KV @ 200W

SPELLMAN HIGH VOLTAGE ELECTRONICS CORPORATION

- ***Integrated HV Supply, Filament Supply, X-Ray Tube, Beam Port and Control Electronics***
- ***Compact & Lightweight***
- ***Universal Input, Power Factor Corrected***
- ***Can be Mounted in Any Physical Orientation***
- ***Analog Monitoring and Standard RS-232 Digital Interface***

Spellman's XRB201 Series of Monoblock® X-Ray sources are designed for OEM applications powering its internal X-Ray tube up to 160kV at 200W. Features like universal input, small package size and a standard analog and RS-232 digital interface simplify integrating the XRB201 into your X-Ray system. Standard models are available either with fan shaped or cone shaped beam geometries. Proprietary emission control circuitry provides excellent regulation of X-Ray tube current, along with outstanding stability performance.

TYPICAL APPLICATIONS

X-Ray Scanning: Food Inspection, Fill Level Confirmation and Security Applications

SPECIFICATIONS

X-Ray Characteristics:

Tube Type:	Glass tube, Tungsten target, Be filter
Focal Spot:	0.8mm x 0.8mm, 0.5mm x 0.5mm (IEC 336)
Beam Filter:	0.016 - 0.08" Al, 0.125" Ultem
Beam Geometry:	Asymmetrical fan up to 80° x 30°, cone up to 40°

Input Voltage:
90-264Vac, 50/60Hz, 5A maximum

X-Ray Tube Voltage:
Nominal X-Ray tube voltage is adjustable between 80kV to 160kV

X-Ray Tube Current:
0.1mA to 1.2mA over specified tube voltage range

X-Ray Tube Power:
200W, maximum continuous

Voltage Regulation:

Line:	±0.1% for a ±10% input line change of nominal input line voltage
Load:	±0.1% for a 0.1mA to 1.2mA load change

Voltage Accuracy:
Voltage measured across the X-Ray tube is within ±1% of the programmed value

Voltage Risetime:
Ramp time shall be 1 second from 10% to 90% of rated output

Voltage Overshoot:
Within 5% of rated voltage in 10ms

Voltage Ripple:
0.2% pp of rated voltage @ 1kHz

Current Regulation:

Line:	±0.1% for a ±10% change in nominal line
Load:	±0.5% @ 80-160kV, 0.1mA to 1.2mA

Current Accuracy:
Current measured through the X-Ray tube is within ±1% of the programmed value

Current Risetime:
1 second from 10% to 90% of rated output

Arc Intervention:
4 arcs in 10 seconds with a 200ms quench = Shutdown

Filament Configuration:
Internal high frequency AC filament drive with closed loop filament emission control

Analog Interface:
0 to 10Vdc ground referenced signals

Digital Interface:
RS-232 interface.

Control Software:
A demo GUI for engineering evaluations will be provided for the RS-232 digital interface upon request.

Interlock/Signals:
A hardware interlock function is provided

Operating Temperature:
0°C to +40°C

Storage Temperature:
-40°C to +70°C

Humidity:
10% to 95% relative humidity, non-condensing

Cooling:
Convection/external forced air so tank is <55°C

Spellman® High Voltage Electronics Corporation
Corporate Headquarters
Hauppauge, New York USA
+1-631-630-3000 FAX: +1-631-435-1620
e-mail: sales@spellmanhv.com
www.spellmanhv.com

128081-001 REV. J
Spellman High Voltage is an ISO 9001:2008 and ISO 14001:2004 registered company

Input Line Connector:
3 pin Phoenix Contact p/n 1829167

Analog Interface Connector:
10 pin Phoenix Contact p/n 1755503

Digital Interface Connector:
9 pin D connector, female

Grounding Point:
8-32 ground stud provided on chassis

Dimensions:
See drawing

Weight:
90lbs (40.5kg)

Orientation:
Can be mounted in any orientation.

X-Ray Leakage:
Not to be greater than 0.5mR/hr at 5cm outside the external surface per FDA 21 CFR 1020.40 and OSHA 29 CFR 1020.96

Regulatory Approvals:
Compliant to EEC EMC Directive. Compliant to EEC Low Voltage Directive. UL/CUL recognized file E235530

Special Features/Requirements:
High stability X-Ray output: Dose rate variations <2%

AC INPUT POWER JB1 3 PIN PHOENIX CONTACT

PIN	SIGNAL	PARAMETERS
1	Line	90-264Vac
2	GND	Chassis Ground
3	Neutral	Neutral

RS-232 DIGITAL INTERFACE— JB16 9 PIN FEMALE D CONNECTOR

PIN	SIGNAL	PARAMETERS
1	N/C	No Connection
2	TD	Transmit Data
3	RD	Receive Data
4	N/C	No Connection
5	SGND	Signal Ground
6	N/C	No Connection
7	N/C	No Connection
8	N/C	No Connection
9	N/C	No Connection

ANALOG INTERFACE— JB15 10 PIN PHOENIX CONTACT

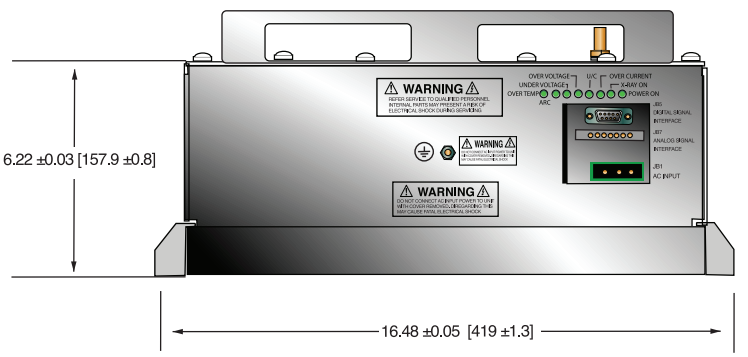
PIN	SIGNAL	PARAMETERS
1	X-Ray Signal	+24Vdc =Enable X-Ray, 0Vdc/open = Disable X-Ray, Zin=2.2kΩ
2	X-Ray Signal Return	Signal Return
3	N/C	N/C
4	kV Monitor	0-10Vdc = 0 to 178kV, Zout = 10kΩ
5	Signal Ground	Signal Ground
6	mA Monitor	0-10Vdc = 0 to 1.5mA, Zout = 10kΩ
7	Fault Signal	Open collector, High (Open) = No Fault, 35Vdc @10mA maximum
8	HV ON Lamp Relay n/o	Relay Normally Open, 50Vdc @ 1A maximum
9	HV ON Lamp Relay common	Relay Common, 50Vdc @ 1A maximum
10	HV ON Lamp Relay n/c	Relay Normally Closed, 50Vdc @ 1A maximum

LED INDICATORS

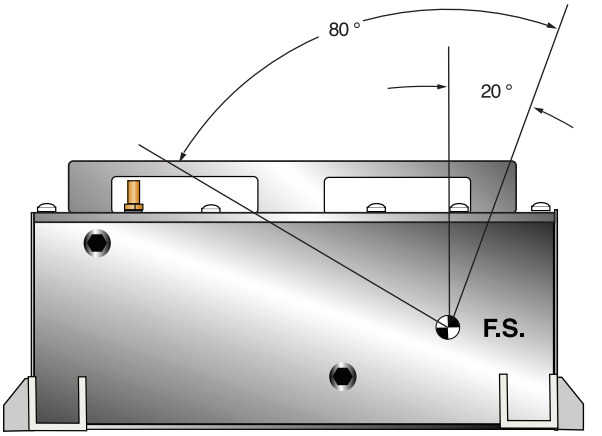
INDICATOR	SIGNAL NAME	CONDITION Illuminated When...
LED 1	OT	Over temperature occurs
LED 2	ARC FLT	Arc fault occurs
LED 3	UV	Low kV occurs
LED 4	OV	High kV occurs
LED 5	UC	Low mA occurs
LED 6	OC	High mA occurs
LED 7	X-RAY ON	X-Rays are enabled
LED 8	PWR	Power is ON

DIMENSIONS: in.[mm]

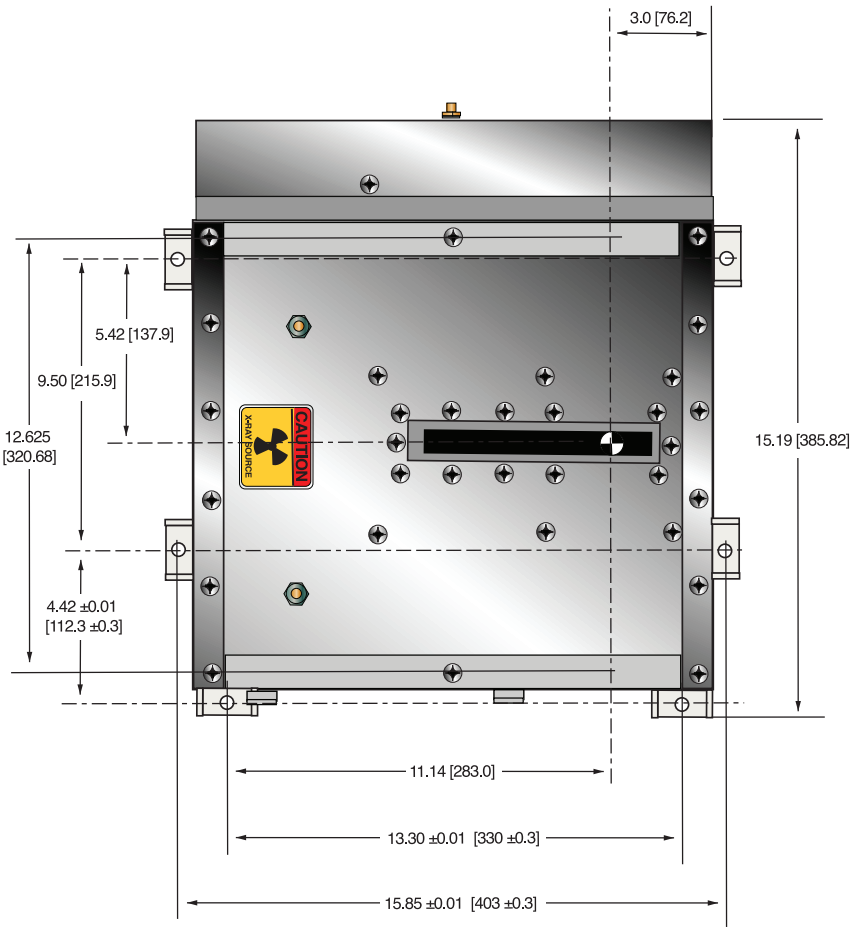
FRONT VIEW



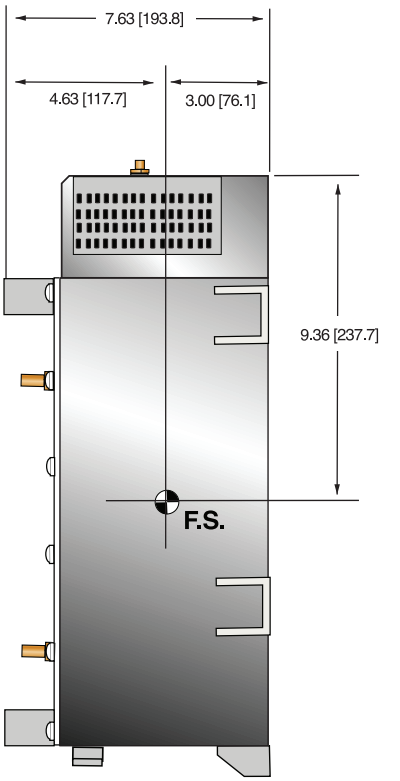
BACK VIEW



TOP VIEW



SIDE VIEW



Spellman® High Voltage Electronics Corporation
Corporate Headquarters
Hauppauge, New York USA
+1-631-630-3000 FAX: +1-631-435-1620
e-mail: sales@spellmanhv.com
www.spellmanhv.com