

Represents just one of the models with the following specifications.

Spellman's XRB012 Series of Monoblock® X-Ray sources are designed for OEM applications powering its internal X-Ray tube up to 80kV. Features like small package size, DC input voltage and analog interfacing simplify integrating the XRB012 into your X-Ray analysis system. Standard models are available with cone shaped beam geometry. Proprietary emission control circuitry provides excellent regulation of X-Ray tube current, along with outstanding stability performance.

TYPICAL APPLICATIONS

Medical Radiography, Fill Level Confirmation, NDT and Food Inspection

SPECIFICATIONS

Input Voltage:

24Vdc @ 2.5A, ±12Vdc @ 250mA

X-Ray Tube Voltage:

Nominal X-ray tube voltage is adjustable between 40kV to 80kV

X-Ray Tube Current:

20µA to 160µA over specified tube voltage range

Duty Cycle:

15 minutes ON/15 minutes OFF at 80kV @160uA

Voltage Regulation:

Line: ±0.1% for a change of 23.5 to 24.5Vdc of nominal input line voltage
Load: 0.1% for a 20 to 160uA load change

Voltage Accuracy:

Voltage measured across the X-Ray tube is within ±0.5% of the programmed value

Voltage Risetime:

Ramp time shall be 250ms from standby, 10ms shot to shot within 5 minutes

Voltage Ripple:

1% RMS measured at 80kV @ 160uA

Voltage Temperature Coefficient:

100ppm/°C from 10°C to 35°C

- **INTEGRATED HV SUPPLY, FILAMENT SUPPLY, X-RAY TUBE, BEAM PORT AND CONTROL ELECTRONICS**
- **COMPACT & LIGHTWEIGHT**
- **CAN BE MOUNTED IN ANY PHYSICAL ORIENTATION**
- **ANALOG CONTROL INTERFACE**

Current Regulation:

Line: ±0.5% for a change of 23.5 to 24.5Vdc
Load: ±0.5% for a change of 40 to 80kV

Current Accuracy:

Current measured through the X-Ray tube is within 2.50% of the programmed value

X-Ray Tube:

Type: Oxford XTG 90507, typical
Focal Spot: 33 micron focal spot
Beam Filter: Equivalent to 1mm, ±0.2mm of aluminum
Beam Geometry: Cone, not less than 14°

Analog Interface:

Ground referenced 10kV/volt and 20uA/volt programming and monitoring

Interlock/Signals:

A hardware interlock function is provided

Operating Temperature:

10°C to +35°C

Storage Temperature:

0°C to +40°C

Humidity:

5% to 95% relative humidity, non-condensing

Cooling:

50cfm of customer supplied forced air is required

Input Line Connector:

Two 9 pin D connectors, male and female

Analog Interface Connector:

15 pin D connector, male

Grounding Point:

8-32 ground stud provided on chassis

Dimensions:

4" X 4" X 11" (101.6mm X 101.6mm X 279.4mm)

Weight:

14 lbs (6.35kg)

Orientation:

Can be mounted in any orientation.

X-Ray Leakage:

Less than 50MR/HR at 1 meter with 50% Duty Cycle

DC INPUT POWER 9 PIN MALE MINI-D CONNECTOR

PIN	SIGNAL	PARAMETERS
1	+15Vdc	+15Vdc @ 300mA
2	±15Vdc RTN	±15Vdc Return
3	-15Vdc	-15Vdc @ 300mA
4	+24Vdc	+24Vdc @ 2A
5	+24Vdc	+24Vdc @ 2A
6	Filament Standby	Contact closure to 24Vdc return for filament standby
7	+24Vdc RTN	+24Vdc return
8	+24Vdc RTN	+24Vdc return
9	Spare	Spare

DC INPUT POWER 9 PIN FEMALE MINI-D CONNECTOR

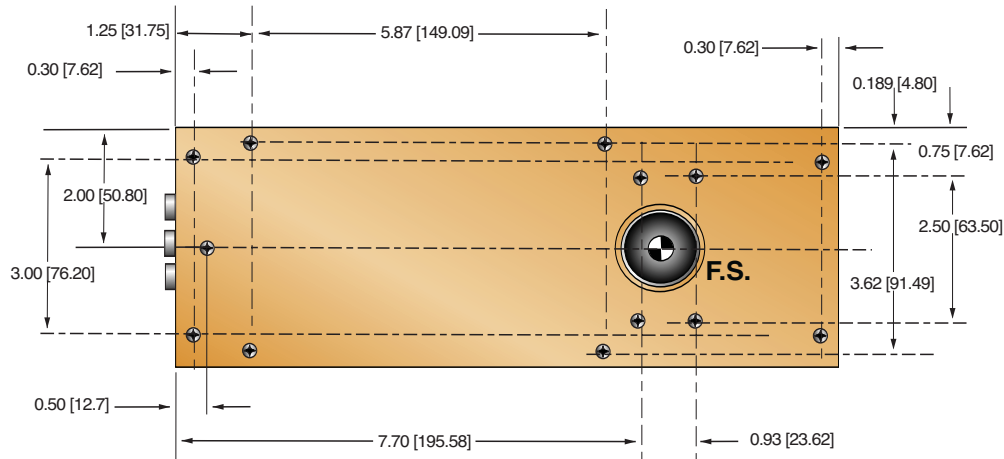
PIN	SIGNAL	PARAMETERS
1	+15Vdc	+15Vdc @ 300mA
2	±15Vdc RTN	±15Vdc Return
3	-15Vdc	-15Vdc @ 300mA
4	+24Vdc	+24Vdc @ 2A
5	+24Vdc	+24Vdc @ 2A
6	Filament Standby	Contact closure to 24Vdc return for filament standby
7	+24Vdc RTN	+24Vdc return
8	+24Vdc RTN	+24Vdc return
9	Spare	Spare

ANALOG INTERFACE— J2 15 PIN MALE MINI-D CONNECTOR

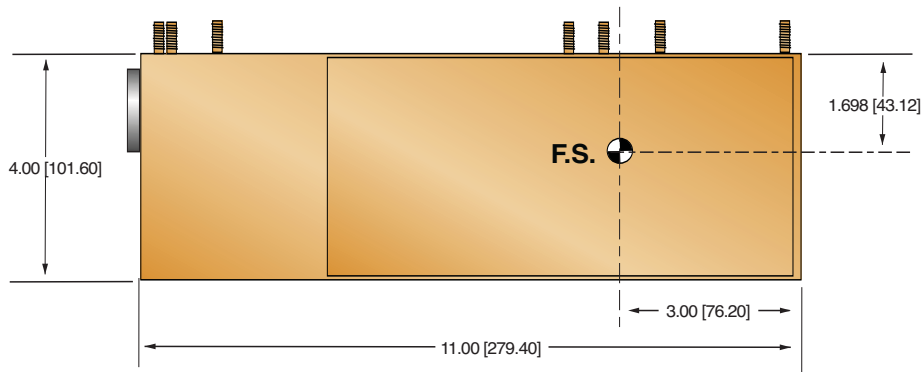
PIN	SIGNAL	PARAMETERS
1	kV Program Input	10kV/volt, Z _{in} = 10KΩ
2	mA Program Input	20uA/volt, Z _{in} = 10KΩ
3	Signal Ground	Signal Ground
4	kV Monitor Output	10kV/volt, ±1%, Z _{out} = 100Ω
5	mA Monitor Output	20mA/volt, ±1%, Z _{out} = 100Ω
6	Signal Ground	Signal Ground
7	X-Ray Ready Status Output	Open collector, 60Vdc @ 300mA maximum, active low
8	X-Ray On Status Output	Open collector, 60Vdc @ 300mA maximum, active low
9	X-Ray On Input	Low (short)=X-Ray On, Open=X-Ray Off (Internal pull up resistor to 15Vdc)
10	Filament Standby Status Output	Open collector, 60Vdc @ 300mA maximum, active low
11	Filament Current Limit Fault Output	Open collector, 15Vdc @ 10mA maximum, active low
12	Over Voltage Fault Output	Open collector, 60Vdc @ 300mA maximum, active low
13	Over Current Fault Output	Open collector, 60Vdc @ 300mA maximum, active low
14	Tube Arc Fault Output	Open collector, 60Vdc @ 300mA maximum, active low

DIMENSIONS: in.[mm]

TOP VIEW



SIDE VIEW



BOTTOM VIEW

