

4.HVC80801 X-Ray Source



Introduction:

The HVC80801 is a compact, safe, low-leakage, and electrically stable integrated X-ray source. It operates continuously at 350W within the allowable temperature range. The system includes a high-voltage power supply, filament power supply, X-ray tube, high-voltage oil tank, and radiator. This high-frequency, self-cooling, and self-protecting X-ray generator delivers up to 80kV and 350W. It primarily consists of a control box and high-voltage oil tank, with RS232 interface enabling system control, monitoring, and firmware upgrades.

Features:

1. Compact design, easy to install
2. System integrates high-voltage power supply, filament power supply, and control unit
3. Self-circulating cooling system
4. Versatile installation options
5. Standard digital interface for easy application

Application:

Food testing, industrial non-destructive, security application and other fields, mostly used for X-ray machines.

Specification:

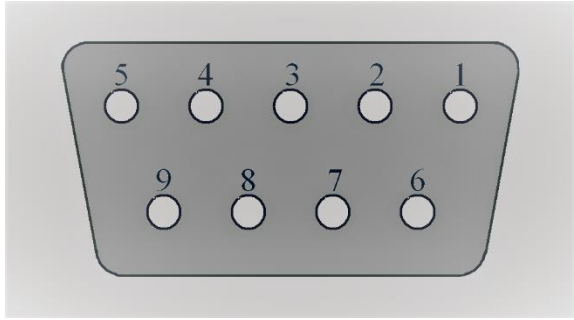
Item	Specification
Input voltage	230VAC \pm 10%, 50/60Hz, 3Amps
Output power of X ray tube	Max continuous output power 350W (80kV/4.3mA or 43kV/8.0mA)
Output voltage	Rated output voltage: Continuously adjustable voltage range 30kV---80kV
	Output voltage ripple: \pm 0.5% (peak to peak)

	Output voltage accuracy: $\pm 2\%$ of voltage setting value
	line regulation: $\pm 0.1\%$
	load regulation: $\pm 0.1\%$
Tube current	Rated tube current: Continuously adjustable current range 0.5mA-8.0mA
	Tube current accuracy: $\pm 0.2\text{mA}$ of current setting value
	line regulation: $\pm 0.1\%$
	load regulation: $\pm 0.1\%$
Rise time of output voltage	The kV rise time is < 0.6 Sec at maximum power
	The kV rise time is < 0.1 Sec at low voltage ($< 40\text{kV}$)
Filament power supply:	input voltage: 24VDC
	filament voltage: 2.0 to 5.3Vac
	filament: 3.0 to 3.8 Amps RMS
	preheating time: 3sec
Tube feature	Tube type: fixed anode、glass envelope、tungsten target
	focus: 0.8mm
	inherent filtration: 0.8mm Be, 0.7mm Al
	radiation angle: $80^\circ \times 16^\circ$ fan beam
	target angle: 25°
Cooling	transformer oil, external circulation, external forced air cooling
Working temperatures	$-10^\circ\text{C} \text{---} 40^\circ\text{C}$
Storing temperature	$-20^\circ\text{C} \text{---} 60^\circ\text{C}$
System temperature protection	$60^\circ\text{C} \pm 3^\circ\text{C}$ of oil temperature
Humidness	98%, No condensation
Weight	Oil tank: 27.3kg
	Control Unit: 3.8kg
Installation direction	Installation in any direction
Radiation angle	$16^\circ \times 80^\circ$
X-ray leakage	Less than 0.5mR/hr @5cm from the surface of the HVC80801.

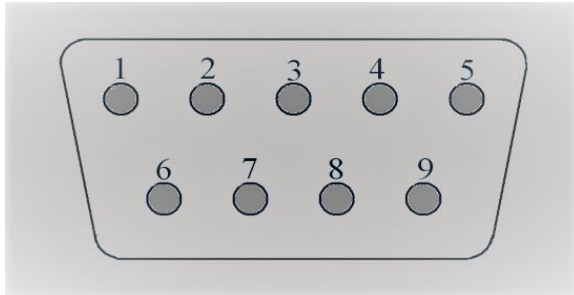
JB1/AC~, (AC Input Power Connector)


Pin	Signal	Parameter
1	L	live wire
2	N	Neutral line
3	G	PE

JB2/COM, (DMR-9S interface definitions)

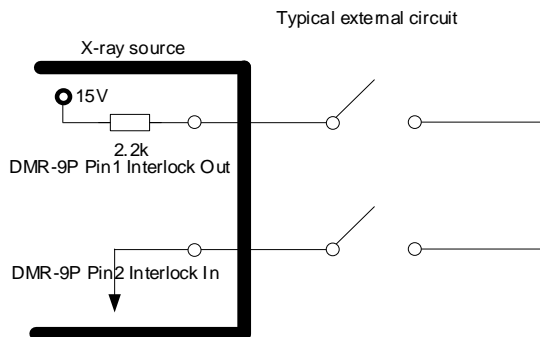


Pin	Signal	Parameter
1.4.6.7.8.9	N/C	No connect
2	TXD	Data transmit
3	RXD	Data receive
5	GND	Signal gnd

JB3/Interlock, (DMR-9P interface definitions)


Pin	Signal	Parameter
3/4/5/6/7/8/9	N/C	No connect
1	Interlock Out	
2	Interlock In	

Short connect pin1 and pin2 make X ray source normal operation. Typical connection :

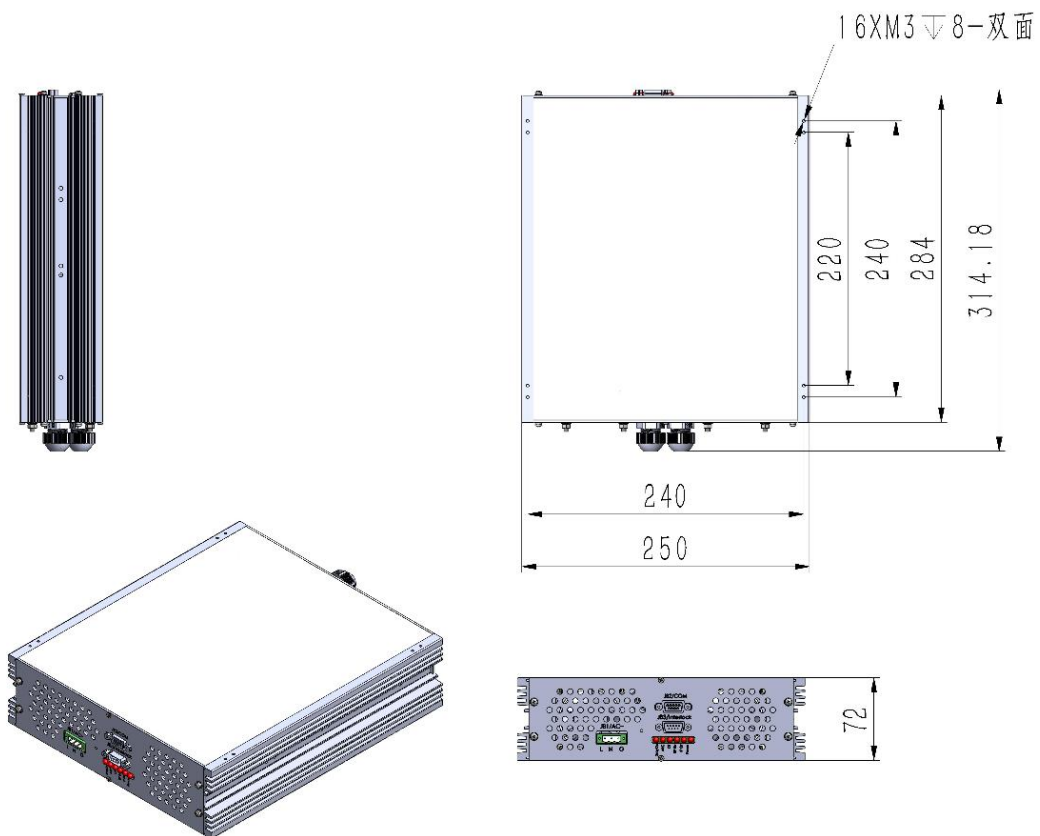

Led indicator

ID	Color	Meaning
XrayOn	Yellow	indicate X ray on
ARC	Red	Arcing in oil tank
OT	Red	Over temperature
EP_Err	Red	Tube voltage error
IP_Err	Red	Tube current error
Power	Green	Power on

Tank size

HVC80801

Unit: mm



HVC80801
Unit: mm

