



- **Standard ET interface, RS-232 control**
- **Electron Microscopy, Electron Beam, Ion Beam Power System**
- **High Accuracy, High Stability, Low Ripple**
- **Integrated Single Chassis Solution**
- **Corona Free Operation**
- **Overtoltage, overcurrent, short circuit and Arc protection**
- **OEM customization available**

### INTRODUCTION

Wisman's HEM power supply is an integrated multiple output high voltage power supply with digital control. Typical applications include scanning electron microscopy; Ion beam, Electron beam, Semiconductor analysis, milling and repair; disc drive head trimming, Ion beam etching and focused ion-beam lithography. A modular design approach allows individual subassemblies to be easily configured in a common rack. Interface, logic and control circuitry utilizes surface mount technology, minimizing cost and size. Individual supplies (Accelerator, Filament, Extractor, Suppressor or Lens) are designed to exacting application specific standards, with ultra low output ripple, excellent regulation, stability, temperature coefficient, drift and accuracy specifications. Isolation and control of the respective floating sources are provided via Wisman's proprietary high voltage isolation techniques. Customer control of this integrated HEM power supply system is accomplished via a fiber optic isolated RS-232 interface.

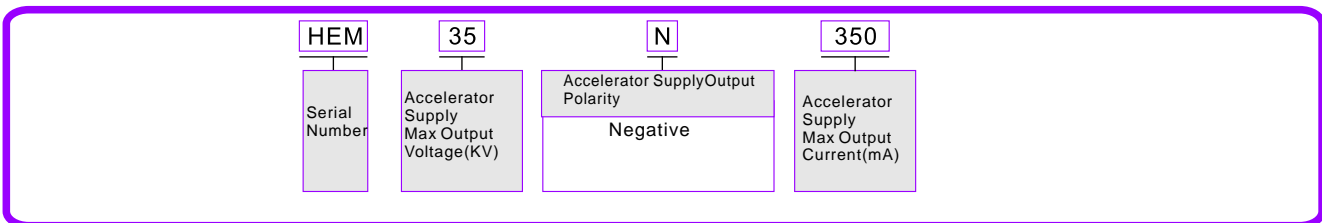
### TYPICAL APPLICATION

Transmission Scanning Electron Microscope, Scanning Electron Microscope, Semiconductor analysis, Processing and repair, Ion beam etching, Focused ion beam lithography

### HEM SELECTION TABLE

Accelerator supply				Filament Supply			Suppressor Supply				Extractor Supply			
Voltage(kv)	Current(uA)	Ripple	Stability	Current(uA)	Ripple	Stability	Voltage(kv)	Current(uA)	Ripple	Stability	Voltage(kv)	Current(uA)	Ripple	Stability
-35	350	10ppm	10ppm/min	3	0.1%p-p	100ppm/10min	-512	150	10ppm	10ppm/min	10.24	256	10ppm	10ppm/min
-15			50ppm/h											

### HEM SELECTION EXAMPLE



### SPECIFICATION

PARAMETER	DESCRIPTION
Input	+24Vdc ± 5%, Max current 5A)
Output	Output voltage 0~35kv, Output current 0~350uA, referenced to Ground)
Load regulation	± 0 .01% (no load to rated load)
Line regulation	< 100mv (Input voltage change ± 10%)
Ripple	25mvp-p
Temperature coefficient	25ppm/
Stability	1.5V/10hrs after reheating for 2 hours

APPLICATION SPECIFIC



PARAMETER		SPECIFICATION
Filament	Output	Output from -0~+5Vdc,output current 0~3A,Referenced ground is accelerator supply
	Load Regulation	± 0.01% ( no load to rated load ).
	Line Regulation	5mA(input voltage line change ± 10%).
	Ripple	10mA <sub>p-p</sub>
	Temperature Coefficient	200ppm/ .
	Stability	5mA/10 mins after 2 hours' warm-up.
Suppressor	Output	Output Voltage 0 ~ -512Vdc , Output Current 0~150uA.Referenced ground is accelerator supply
	Load Regulation	± 0.01% ( no load to rated load ).
	Line Regulation	100mA(input voltage line change ± 10%).
	Ripple	150mV <sub>p-p</sub>
	Temperature Coefficient	25ppm/ .
	Stability	500mv/10 hrs. after 2 hours' warm-up.
Extractor	Output	Output Voltage 100v~+10.24kV , Output Current 0~256uA.Referenced ground is accelerator supply
	Load Regulation	± 0.01% ( no load to rated load ).
	Line Regulation	100mA(input voltage line change ± 10%).
	Ripple	150mV <sub>p-p</sub>
	Temperature Coefficient	25ppm/ .
	Stability	500mV /10 hrs. after 2 hours' warm-up.
Operating Temperature		0 ~ +40 .
Storage Temperature		-20 ~ +85 .
Cooling		Natural convection
Humidity		20% to 85% RH, non-condensing.
Dimensions		9.06 " (3U)H X 10.6 " W X 14.96 " D (230mm x 270mm x 380mm)
Weight		20kg.

**HEM INPUT INTERFACE**

J1	SIGNAL	
1	+24Vdc input	+24Vdc ± 5% Max current 5A
2	GND	Power GND
3	Interlock	Connect J1-3 and J1-4,start
4	GND	GND

**RS-232 DIGITAL INTERFACE**<sup>D</sup>

J2	SIGNAL	J2	SIGNAL
1	N/C	6	N/C
2	TXD/Transmit	7	N/C
3	RXD/Receive	8	N/C
4	N/C	9	N/C
5	GND		

**ETHERNET DIGITAL INTERFACE**<sup>D</sup>

J3	SIGNAL	J3	SIGNAL
1	RX+(Receive+)	6	TX-(Transmit-)
2	RX-(Receive-)	7	N/C
3	TX+(Transmit+)	8	N/C
4	N/C	9	N/C
5	GRND		

**HEM DIMENSION**

