

## ELECTRON BEAM UP TO 60KV POWER UP TO 80KW+



Multisource power supply dedicated to Electron Beam application. EB Power Supplies provide rapid rise time and advanced arc management to ensure beam continuity. They also integrate as a single system the auxiliary DC Power Supplies (Filament, Wehnelt, BIAS, Bombardment).

### APPLICATIONS

- Beams (Electron-Ion)
- Tubes
- Welding
- Additive manufacturing (3D printing)
- Sterilization
- Surface treatment
- PVD (Physical Vapor Deposition)

### MAIN SPECIFICATION

- Output Voltage: up to 60kV (70kV with no load)
- Output Power: 6kW to 80kW+
- Polarity: Negative
- Rise-time(10-90%): <3ms
- Ripple+Noise: <0.2% RMS of max output voltage
- Remote interface: 0-10V analog interface

**TECHNICAL SPECIFICATIONS - CATHODE POWER SUPPLY**

FORMAT	19" cabinet or 19" cabinet with separated oil tank
EFFICIENCY	> 92% at full load
MAINS INPUT	400 VAC $\pm$ 10%, 47-63 Hz 3 Phases + Earth
INPUT POWER FACTOR	$\geq$ 0.90 at full load
INRUSH CURRENT	Limited to current at full power
VOLTAGE LOAD REGULATION	< 0.1% (for 10–100% load)
VOLTAGE LINE REGULATION	< 0.05% (for Mains Voltage $\pm$ 10%)
CURRENT LOAD REGULATION	< 0.05% (for 10–100% load)
CURRENT LINE REGULATION	< 0.05% (for Mains Voltage $\pm$ 10%)
STABILITY (AFTER ONE HOUR WARM-UP)	100ppm, 300ppm / 8 hours of operating with constant load and ambient temperature
STORED ENERGY	<1 J/kW

**TECHNICAL SPECIFICATIONS - AUXILIARY POWER SUPPLIES**

FILAMENT POWER SUPPLY	Voltage: up to 20V Current: up to 15A
WEHNELT/BIAS POWER SUPPLY (3 CONFIGURATIONS AVAILABLE)	Voltage: 2kV, 3kV or 3.8kV Power: 5W
BOMBARDMENT POWER SUPPLY (4 CONFIGURATIONS AVAILABLE)	1kV - 50mA 1.7kV - 80mA 3kV - 45mA 5.5kV - 130mA

\* Other configurations on demand

**CONTROL**

REMOTE CONTROL INTERFACE	0-10V Analog
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## OPERATING ENVIRONMENT

OPERATING TEMPERATURE	From 0 to 50°C
STORAGE TEMPERATURE	-20°C to +60°C
TEMPERATURE COEFFICIENT	100 ppm/°C

## STANDARDS AND REGULATIONS

CE CERTIFIED AND ACCORDING	<p>Low voltage directive: 2014/35/EU</p> <p>EMC directive: 2014/30/EU</p> <p>RoHS directive: 2011/65/EU</p> <p>EN 61000-6-2: 2019</p> <p>EN 61000-6-4: 2019</p> <p>EN 61326-1: 2021</p> <p>EN 61000-3-2: 2019</p> <p>EN 61000-3-3: 2013 + A1: 2019</p> <p>EN 61010-1: 2010 + A1: 2019</p> <p>EUROLAB EMC decision n°11: issue 1 of 18 of December 2007</p>
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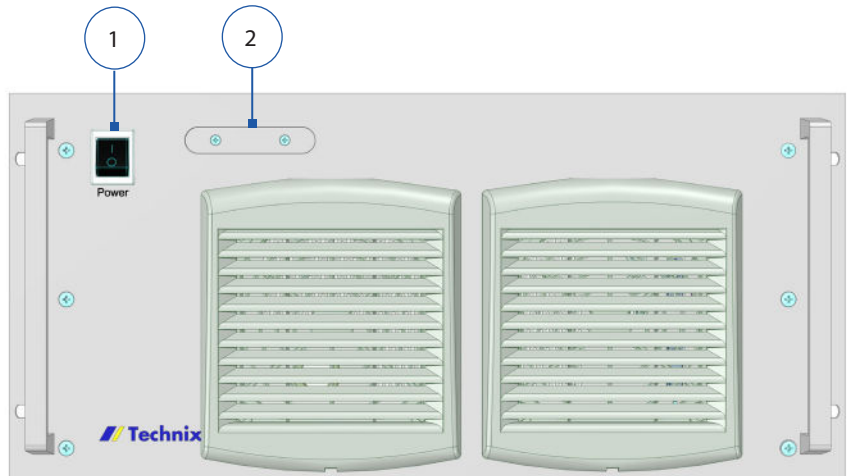
## DOCUMENTATION AND SERVICES

DOCUMENTATIONS	<p>User manual</p> <p>Test report</p> <p>EU declaration of conformity </p> <p>RoHS2 declaration of conformity </p>
WARRANTY	<p>2 years</p> <p>Extension on demand</p>
ON DEMAND	<p>Factory Acceptance Test (FAT)</p> <p>Detailed design report</p> <p>Custom tests</p> <p>Manufacturing process certification</p> <p>Special engineering</p>

## INTERFACES

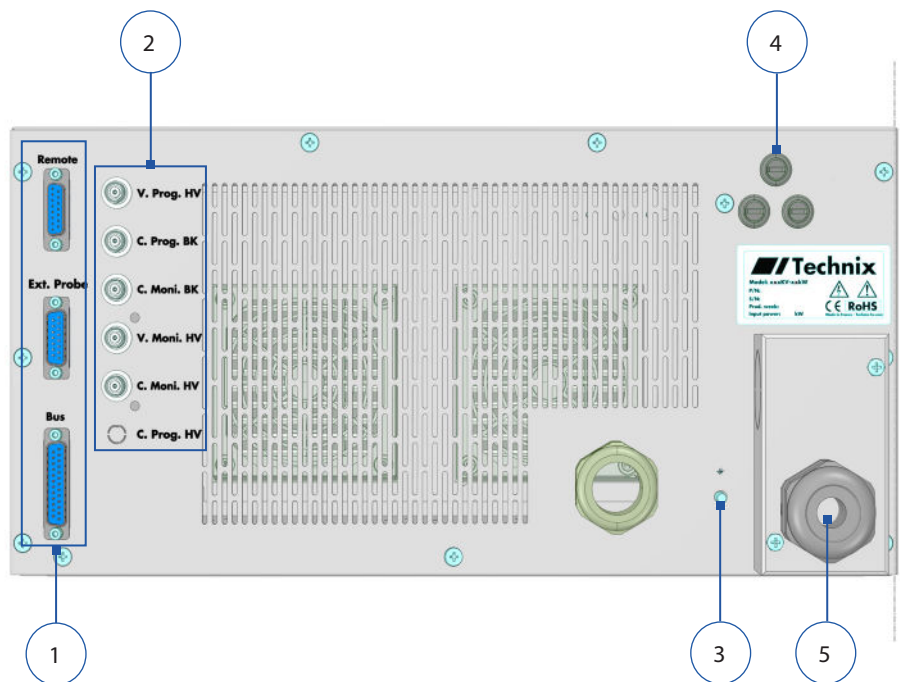
### FRONT PANEL

1. ON / OFF
2. Arc protection settings



### REAR PANEL

1. D-SUB
2. BNC
3. Earth bolt
4. Fuses
5. Mains Input



**0-10V ANALOG INTERFACE****HV CONTROL**

HV voltage setting : 0-6v → 0-60V	Input	BNC
HV voltage measurement : 0-6v → 0-60V	Output	BNC
HV current measurement : 0-10V → 0 to 100 %	Output	BNC
HV ON/OFF	Input	D-sub
HV & Filament inhibit	Input	D-sub
FAULT	Output	D-sub
HV voltage reached	Output	D-sub
Arc detected	Output	D-sub

**FILAMENT CONTROL**

Filament current setting : 0-10V → 0-15A	Input	BNC
Filament current measurement : 0-10V → 0-15A	Output	BNC
Filament ON/OFF	Input	D-sub
FAULT	Output	D-sub
Filament & HV inhibit	Input	D-sub
Filament current reached	Output	D-sub

**BOMBARDMENT CONTROL**

Bombardment current setting : 0-10V → 0 to 100%	Input	BNC
Bombardment current measurement : 0-10 → 0 to 100%	Output	BNC
Bombardment switching ON/OFF : 0-10V → 0 to 100%	Input	BNC
Bombardment voltage measurement	Output	BNC
Bombardment ON/OFF	Input	D-sub
Bombardment ON/OFF	Output	D-sub
Bombardment & Wehnelt inhibit	Input	D-sub
FAULT	Output	D-sub

**WEHNELT CONTROL**

Wehnelt voltage setting : 0-10V → 0 to 100%	Input	BNC
Wehnelt voltage measurement : 0-10 → 0 to 100%	Output	BNC
Wehnelt & BK inhibit	Input	D-sub
Wehnelt ON/OFF	Input	D-sub

**RANGE****MODEL REFERENCE: EBM 0 to 60 kV - 6 to 80 kW - FWB**

VOLTAGE      POWER

OUTPUT POWER	6 kW	15 kW	20 kW	40 kW	60 kW	80 kW
OUTPUT VOLTAGE	Max Current					
45 kV	147 mA	367 mA	450 mA	889 mA	1.46 A	1.78 A
60 kV	110 mA	260 mA	340 mA	680 mA	1.1 A	1.34 A