

EIK POWER SUPPLY/MODULATOR

High Altitude Pulsed Power Supply

The model VPW2888 is a light weight and compact power supply modulator intended to operate a wide range of CPI pulsed Extended Interaction Klystrons (EIKs) in a high altitude environment.

The power supply modulator (PSM) is fully encapsulated in epoxy using a proprietary process developed for the space industry, making it highly resistant to the effects of temperature, altitude, humidity, vibration and shock

This equipment comes with a full complement of operating, control and protective equipment and supporting documentation.

The PSM converts the DC primary power into the high voltages necessary for operation of the EIK. The PSM operating values are factory set for optimal EIK performance. Field-adjustment of the PSM is not necessary.



Model VPW2888

Features

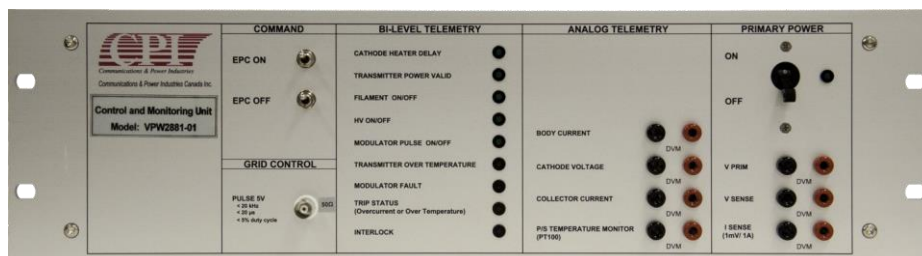
Input Voltage	24 to 36 VDC
Pulse Width	1.2 to 20.0 μ s
Pulse Rate Frequency	20 kHz
Duty Cycle	5 %
Temperature Operating	-40 to +50 $^{\circ}$ C
Temperature Non-operating	-54 to +60 $^{\circ}$ C
Humidity	95% relative non-condensing
Altitude	20,000 m
Dimensions (LxWxH mm)	300x158x130
Mass	8.2 kg
Conduction Cooled	
Optional Control & Monitoring Unit	
Broad range of EIKs supported	

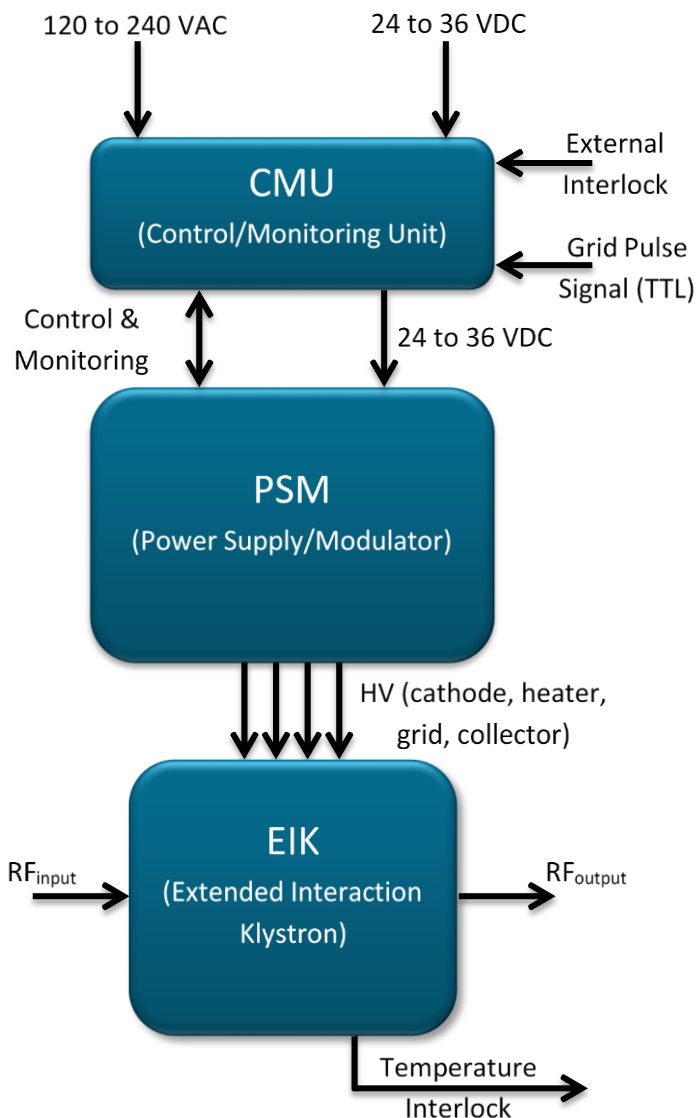
The EIK is joined to the PSM by high voltage connectors which are potted onto the EIK high voltage wires. The grid wire of the EIK includes a grounded shield. The EIK and PSM must share a common ground connection for proper monitoring of the body current. This can be done by mounting the PSM and EIK onto a common metal heatsink, or by using the supplied body wire.

The optional Control and Monitoring Unit (CMU), used for operational monitoring when the defined functionality is not supplied by the radar control system, is housed in a standard 19 inch aluminum chassis. The height is 132.6mm (3U high) and the depth is 280mm.

External power is required for operation. 120 to 240 VAC power for the CMU and 24 to 36V DC primary power for the PSM. A dedicated power switch will connect/disconnect the primary power to the PSM. Grid control is via a user-supplied 5V pulse signal (CMOS compatible, BNC connector). Status is provided via front panel LEDs.

An external interlock signal can be provided to the CMU via a back panel input. The CMU is not designed for exposure to high altitude or low temperature. If it is used for in-flight operation, it must be located in a pressurized, temperature-controlled environment, unlike the PSM.





Subsystem Supply

Control and monitoring unit (CMU)

HV power supply/modulator (PSM)

3 m cable set for connecting CMU to PSM

EIK with 0.4 m HV cables connecting EIK to PSM

Typical Operating Values

Cathode Voltage	-16 kV wrt ground
Heater Voltage	-5.8 V wrt cathode
Collector Voltage (25% Depression)	-4.1 kV wrt ground
Grid Voltage (off)	-3.0 to -3.5 kV wrt cathode
Grid Voltage (on)	-30 V wrt cathode
Cathode Current	650 mA
Body Current	40 mA