Product Specification: VSWR Clamp®

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easel technologies' VSWR Clamp® is a unique product specifically designed to improve the stability of the RF system in a plasma processing machine during the plasma ignition.

It is intended to be fitted to existing systems and can be used with any type of generator.

During plasma ignition and the matching period the generator is exposed to dramatic changes in impedance that can cause instability. The VSWR Clamp® limits the impedance excursion to within safe limits helping the generator to remain within its stable operating region.

When the load is correctly matched the VSWR Clamp® is automatically disconnected ensuring the insertion loss is small.

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Headline specifications are listed below. More details are available on request from info@easeltechnologies.co.uk. easel technologies' products are highly modular and can be configured to meet your specific requirements, contact the company for more details.

Operating frequency: 13.56MHz.

Characteristic impedance (Zo): The VSWR Clamp® is designed for 50Ω operation.

Nominal electrical input: +24V DC, (+18V to +28V), 0.7A, Internal 1A, 20mm fuse.

Electrical connectors: DC power connector: 2.54mm Jack plug. M5 screw terminal earth connection.

RF input and output power: N-type female coaxial bulkhead connector.

Power capability: The VSWR Clamp® is designed for 500W generators with a maximum reflected power of 100W. This is often referred to as the 'fold-back level' and means once this level is exceeded the forward power is limited to prevent the generator from overheating. The VSWR Clamp® is fitted with automatic thermal protection circuitry.

VSWR limits: The standard calibration limits the VSWR at the generator port to <10.

Insertion loss: When the VSWR Clamp® is terminated by the characteristic impedance, i.e. 50Ω, the insertion loss is <0.15dBm.

Mechanical specification: Size width 188mm, height 63mm, depth 188mm. Weight 1.8kg. Colour and finish: green, painted.

Cooling: Forced air cooling at 80m^3 /hour is provided by two fans.

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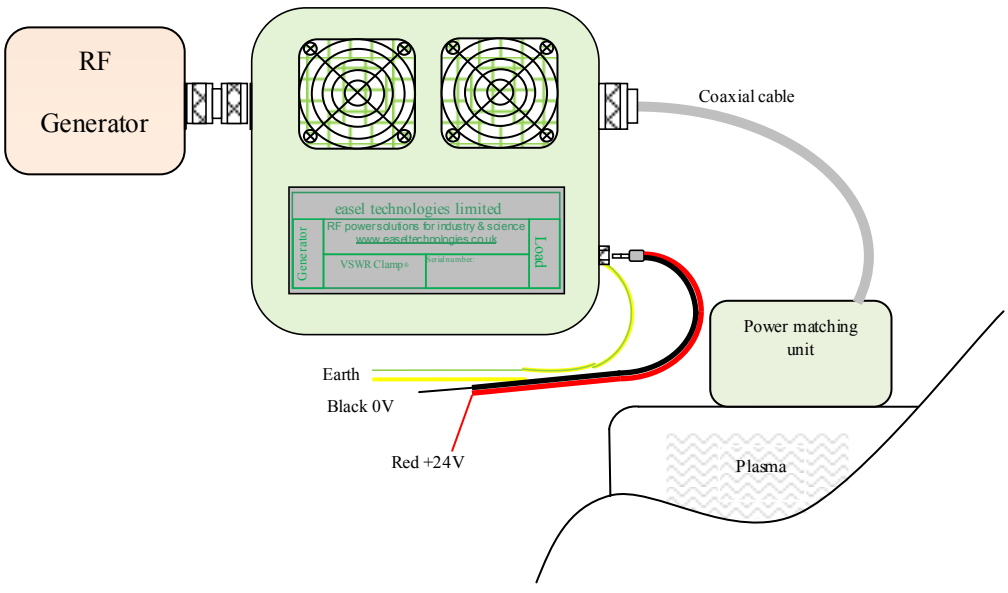
EMC limits: The VSWR Clamp® complies with: EN61000-4-2-:1995 A1, A2 electrostatic discharge immunity test; EN55011:1998, Group 2, Class A radiated emissions tests, providing it is connected correctly and the generator, matching unit, and all other elements within the RF system are compliant with the appropriate standards.

Environmental specifications: Operating temperature: +15C to +35C (59 - 95F) ambient, 5 to 85% R.H. (non-condensing, no formation of ice), 86-106kPa. Temperature, humidity and air pressure operating class 3K3 per EN50178. Cooling air temperature: +5C to +30C (40 – 86F). Storage temperature 0C to +70C (32 – 158F). Transportation: 0C to+70C (32 – 158F), max 90% R.H. non-condensing, 75-106 kPa.

Maintenance: The generator is designed to operate without manual intervention. If servicing is required it must be returned to the factory.

Installation Diagram



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