

TruPlasma Highpulse Series 4000 (G2)
Formed in microseconds – lasting for years

Droplet-free deposition and adhesion. TruPlasma Highpulse Series 4000 (G2).

The TruPlasma Highpulse Series 4000 (G2) power supplies are specifically designed for High Power Impulse Magnetron Sputtering. Pulses of up to 8 megawatts produce extremely dense metal plasma. High ion fluxes and high ion-to-neutral ratios yield films with superior mechanical characteristics.

Hard, homogeneous and smooth, these coatings are ideal for functional and decorative applications. The unique characteristics of ions created by TruPlasma Highpulse Series 4000 (G2) can also be used for metal ion etching (pre-sputter treatment) and semiconductor applications (trench filling).

TruPlasma Highpulse Series 4000 (G2) generators deliver repeated, short, megawatt pulses with up to 4 kiloamperes peak current and up to 2 kilovolts peak voltage. However, short pulse durations and low duty cycles ensure that the average power stays within the kilowatt range. This means you can use existing magnetrons, whether for laboratory or production systems, without modification.

Thanks to integration of patented CompensateLine circuit TRUMPF Hüttinger new generation of HiPIMS power supplies features a market-leading arc energy reduction. Full water cooling of TruPlasma Highpulse power supplies allows to reach best-in-class integration level. Standard models are available with 10 kilowatts (kW), 20 kW and 40 kW average output power. Models offering higher or lower power are available upon request.

Features

- The world's broadest range of TruPlasma Highpulse power force
- Patented CompensateLine Circuit
- Active arc suppression
- Full water cooling
- Adjustable pulse duration and frequency
- Current regulation during pulse duration

Benefits

- Unsurpassed flexibility for lab or industrial processes
- Prevents negative effects of arc both to cathode and coating
- Droplet-free sputtering, reduced film defects
- Compact size, easy system integration
- Easily adoptable to existing cathodes and process requirements
- Control of ionization level, excellent film quality



TRUMPF Hüttinger
generating confidence

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Output Parameters

Output Peak Power	1 MW to 8 MW
Output Peak Voltage	Up to 2 kV
Output Peak Current	Up to 4 kA
Output Average Power	10, 20, 40 kW
Pulse Frequency	Up to 40 kHz
Arc Handling	Compensateline Imax – current based detection Uxl – cross detection
Arc Detection Time	< 500 ns
Arc Energy	< 0.3 mJ / kW (Independent of cable length)

Input Parameters

Line Voltage	3 x 400 V – 480 V ± 10 %
Line Frequency	50 Hz / 60 Hz ± 5 %

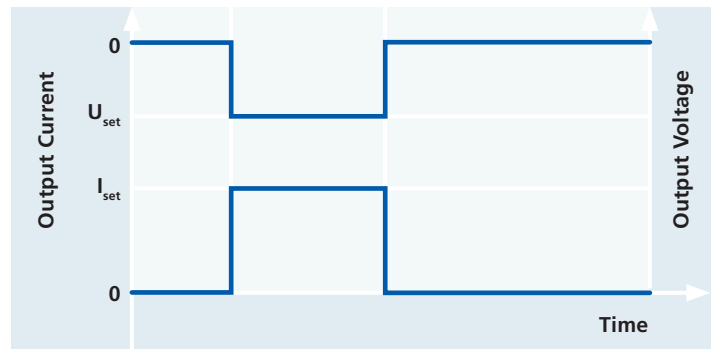
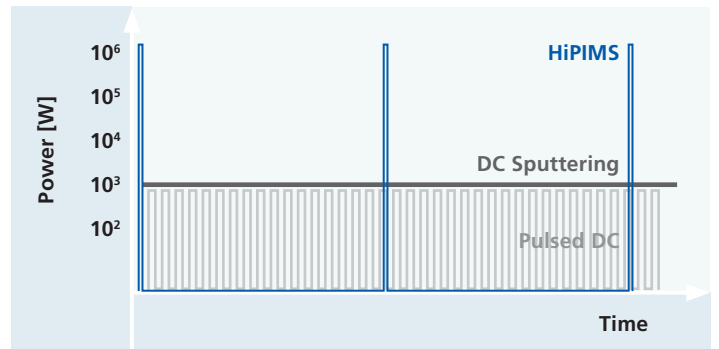
Interfaces

RS 232 / RS 485	9-pin male Sub-D
PROFIBUS	9-pin female Sub-D
EtherCAT*	RJ45
DeviceNet*	5-pin DeviceNet Connector

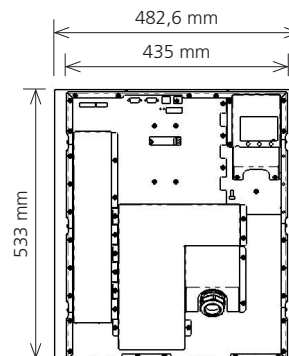
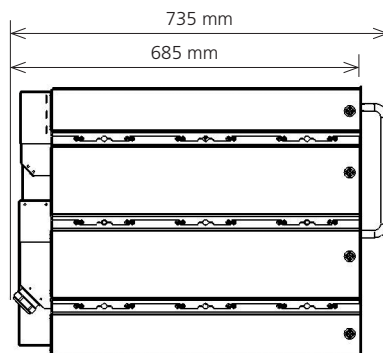
*Available on request

Mechanical and Operation Data

Cooling	Water only (no air flow needed)
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TruPlasma Highpulse 4002 (G2)



For further information please contact:

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