



MAGPULS MP 1 - S1 Series UNIPOLAR Pulse Power Supply



Highest flexibility

Supreme performance for Single Magnetron Sputtering, Plasma Nitriding & BIAS Application processes.

MAGPULS MP1-S1 Series Uni-Polar Pulse Power Supplies, specially designed for continuous operation and Industrial usage, are suitable for operating with single magnetron for non-reactive sputtering deposition on substrates such as metals. Individual operating modes and enhanced ARC-management allows MP1-S1 Pulse Power Supplies to operate effectively in achieving superior quality deposition. Typical applications of MP1-S1 are production of Hard Coatings, Plasma Nitriding & Biasing.

MP1-S1 Series PS is made up of mainly two units. The first unit is the DC power supply, which provides DC power into the big capacitor bank of the pulse unit. The second unit is the Pulsar, an intelligent circuitry, which is equipped with highly sophisticated ARC management capability.

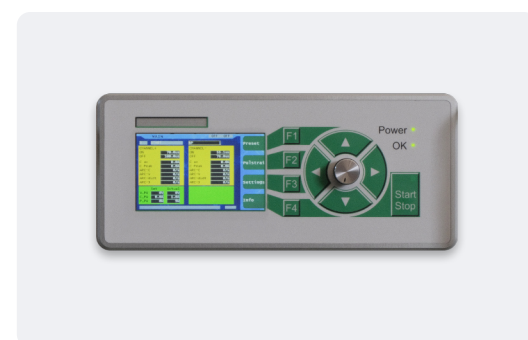
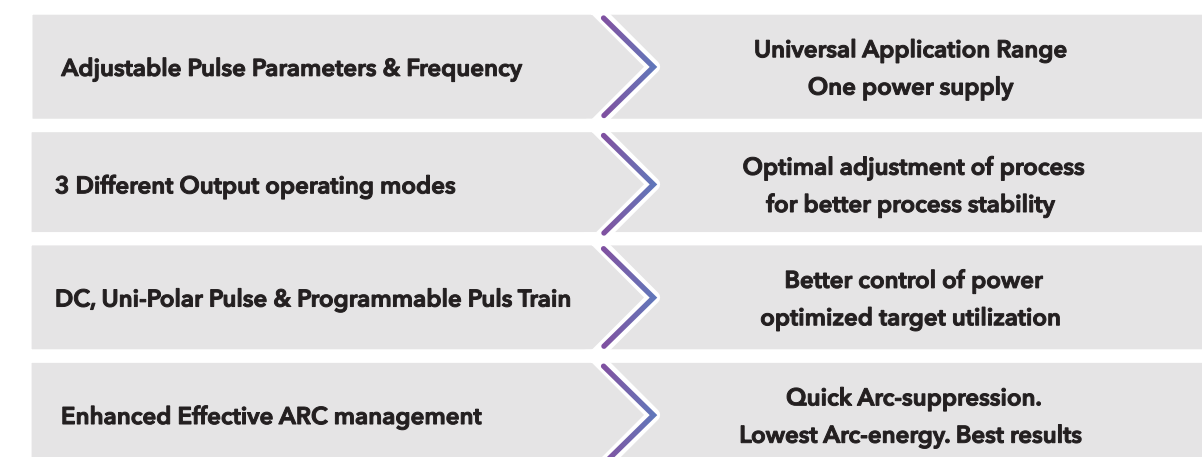
MP1-S1 Units are designed to operate in the frequency range of 1 to 100 kHz and can deliver power up to 60 kw with pulse current up to 400 A (peak current). Higher frequency / current / power ranges are available.

Duty Cycle can be adjusted to achieve higher target utilisation & for better optimisation of the processes. Enhanced ARC management provides best coating results without process interruptions. Optionally, there is an external Optical Input Interface for controlling of the pulse PS externally. It also has an Optical Output Interface for triggering or synchronization of other pulse power supplies of MP1 or MP2 series.

VOLTAGE PULSING - Discrete Advantage

MAGPULS Pulse Power Supplies are designed on Voltage Pulsing Technology (VPT). Unlike in Current Pulsing Technology, user can set the amplitude of the Pulse (voltage) in VPT Pulsars. This provides a very tight control on the process. Stable plasma condition is easily achievable at low pulsing frequencies, well below 100kHz. Pulsing current is in correlation with the plasma impedance & temperature stress on the coating products can be controlled very effectively.

Features and Benefits



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World Wide Sales & Support through Dynamic Partners



	MP1-35	MP1-100	MP1-200	MP1-400
OUT PUT				
Voltage	0 - 1000 V			
Current	0 - 5.3 A DC 0 - 35 A Pulse	0 - 38 A DC 0 - 100 A Pulse	0 - 50 A DC 0 - 200 A Pulse	0 - 120 A DC 0 - 400 A Pulse
Power	0 - 3 kW DC	0 - 15 kW DC	0 - 30 kW DC	0 - 60 kW DC
Pulse Frequency	DC or 0.05 Hz - 50 kHz			
Max. Frequency with Max. Pulse Current	100 kHz at 10 A 25 kHz at 35 A	100 kHz at 25 A 20 kHz at 100 A	100 kHz at 50 A 20 kHz at 200 A	100 kHz at 80 A 20 kHz at 400 A
Pulse Time Settings T _{ON} / T _{OFF}	5.0 μs up to 100 sec / 5.0 μs up to 100 sec			
Duty Cycle	0.005 % to 100 %			
Pulse wave form	DC+ Unipolar pulse Programmable Pulse Train			
IN PUT				
Max. Voltage	0 - 1000 V			
Max. Current	0 - 5.3 A DC	0 - 38 A DC	0 - 50 A DC	0 - 120 A DC
Max. Power	0 - 3 kW DC	0 - 15 kW DC	0 - 30 kW DC	0 - 60 kW DC
Mains Supply	1 Φ 230 V AC 50/60 Hz			
ARC-MANAGEMENT				
I _{max} -Detection	0 - 35 A peak	0 - 100 A peak	0 - 200 A peak	0 - 400 A peak
ARC-Detection Time	< 200 ns			
Off Time after ARC-Detection	30 μs up to 1000 ms			
ARC-Recovery Time	≥ 100 μs			
di/dt Dynamic Change	Var. di/dt threshold: 0 A/μs up to 2000 A/μs			
Voltage Drop ΔU	Var. U threshold: 0 % up to 100 % U _{DC} (Option)			
U x I - Cross Detection	Var. U threshold: 0 V up to 1000 V Var. I threshold: 0.1 x max. I _{peak} up to 1 x max I _{peak} (Option)			
INTERFACE				
Analog	1 (up to 3) 15 pin-Sub-D for controlling external DC power supplies			
Digital	15 pin Sub-D user Interface with floating potential contactors			
RS 232	9 pin Sub-D			
Ethernet	RJ 45			
Profibus	9 pin Sub-D (Option)			
TEMP MANAGEMENT				
Cooling System	Air cooling	Water cooling (max. water pressure 6 bar)		
Cooling Temperatur	Max. 35°C	20°C - 30°C		



	MP1-35	MP1-100	MP1-200	MP1-400
ENV CONDITION				
Ambient Temperature	+ 5 °C up to + 35 °C			
Max. Humidity	80 % non condensing			
Max. Operation Altitude	1500 m above sea level			
MECHANICAL DATA				
Construction	19"-Rack 5 HU			19"-Rack 6 HU
Dimensions H x W x D	222.25 mm x 483 mm x 650 mm			266,7 mm x 483 mm x 650 mm
Weight	36 kg	25 kg	32 kg	40 kg
DISPLAY & CONTROLS				
Display	Graphic color display			
LED Display	Power, OK, Start / Stop			
Controls	Graphical menu via function keys, arrow keys and continuous rotating knob			
SUITABILITY				
Application	Hard Coating on Tools & Bits and BIAS application			
Process	PVD, Plasma Nitriding, Pulse Plasma & Single Magnetron Sputtering			
Material	Metals			

Please contact us for information on higher capacity models & other variants

OUT PUT Waveforms

