

TEL4522 Series

HV power supply | +3kV,33kW, high pulse repeat precision frequency, high charging and discharge frequency, could parallel output, excimer laser power supply.



- efficiency>85%
- 33kW output power
- Missing phase protection
- Pulse repeat precision $\pm 0.1\%$
- Parallel available
- Auto inhibit function

Information :

TEL4522 high voltage direct current power supply is a high-performance equipment with an output power of up to 33 kW adopting modular design and featuring excellent scalability and reliability. With an input voltage of 380 VAC and an output voltage of up to 3 kV, it has high precision control and high energy conversion efficiency, and is equipped with an efficient liquid cooling heat dissipation system to ensure stable operation for a long time. The device supports a charge and discharge repetition of 0.1 - 600 Hz, pulse repeat precision up to 0.1% and has remote control function, allowing users to achieve precise regulation and real-time monitoring of output parameters through external interfaces. a high-power capacitor charging and discharging power supply, TEL4522 could parallel output up to MW power. TEL450 is particularly suitable for excimer laser systems with strict requirements on power stability and response speed, and an ideal solution for industrial laser applications.

Typical Application :

Laser power supply, capacitor charging and discharging.

Specifications :

Input	380VAC (342 - 418VAC) 3Phase, 49.8-50.2 Hz. Power supply will recover from voltage dips and sags according to IEC 61000-4-11 (Grade one, the voltage drops to 70% of the rated voltage). Inrush current \leq maximum operating current, Ground Leakage current \leq 5 mA. Separate M6 ground stud (metric size) on the rear panel.
Output	0kV to 3kV. Output voltage overshoot smaller 0.1% of full scale 3kV, measured at the 5 meter-long cable end output.
Output power	About at 100 % of rated voltage (charge 21 μ F in 1ms from 0V to 3000V), exact value determined by critical performance parameters: capacitance, charge rate/voltage/time.
Efficiency	> 85 % .
Input Protection	Phase loss detection. Equipped with a dedicated 3 phases circuit breaker.
Power factor	> 85%.

AC power input connections	Harting type Han B Base Panel 2 Levers.
Power Functions and Performance	Parallel operation. The HVPS can be paralleled with a second (third) HVPS to provide twice (triple) output power. Input power may be parallel and HV output power may be parallel. Interlocks for each unit displayed on the input panel.
Regulation	40% to 100% scale of rate output, $\pm 0.1\%$ peak to peak (6V total voltage range at 3kV) for 0-600Hz as measured on the first consecutive pulse after a change in output voltage or rep rate.
Stability	$< \pm 0.1\%$ within every 8 hours after 1 hour warm-up.
Linearity of programmed output voltage	40% to 100% scale of rate output, $\pm 1.0\%$.
Programming accuracy of output voltage	40% to 100% scale of rate output, $\pm 0.1\%$ peak to peak (6V total voltage range at 3kV) for 0-600Hz measured on the first consecutive pulse after a change in output voltage or rep rate.
Autoinhibit	Adjustable self-rejection range from 10 μ s to 1010 μ s factory set self-rejection 500 μ s.
External Inhibit	The power supply allows external signals to control the output of the power supply for suppression. The high voltage is triggered by the light enable on the optical receiver, and the maximum external suppression time is 1010 μ s.
Status Indicators	Green LED for mains on, green LED for HV on. 5 red Leds for interlocks phase loss, Overtemp, Overvoltage, Short circuit, Remote Error. The corresponding LED will remain lit until the system is manually reset or until the fault condition is resolved.
MTBF	18000 hours minimum. To be ensured by appropriate burn-in/ measurements with a load comparable to final application. Prototype burn-in time: 10 days, mass production machine burn-in time of 24 hours.
Load capacitance	21 μ F.
Charging time for a single cycle	1ms.
Charging repetition rate	0.1Hz ~ 600hz . Indefinite pause before capacitor discharge is possible. Power supply will keep HV within regulation range.
Charging repetition accuracy	$\pm 0.1\%$.
Load Reversal	Power supply and load will be separated by a magnetic isolator MI. Power supply is able to work with a starting voltage of about 1kV and endure voltage reversal 10V.
End of charging signal	EOC signal will be set, when output voltage has reached set level within regulation band.
Load leakage current	Load leakage current caused by pulser < 10 mA at 3kV.
Cooling	Water cooling.
Water fittings	On the housing the lower connector has to be labelled "water in", the upper connector "water out".
Environmental	Operating: 15°C to 50°C. Storage: 0°C to 85°C.
Humidity	10% to 95%RH, non-condensing.
Dimensions	L520mm, W270mm, H600mm.
Weight	About 50kg.
HV output connector type	Fisher connector. 5m long HV cable.

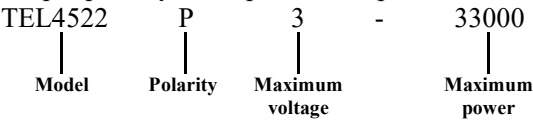
Description of Model Code

The model code represents the performance and parameters of the power supply, which are:

Maximum output voltage in kV;

Maximum output power in W;

Output polarity, P for positive output;



TEL4522 Model selection table:

Rated output		Model
kV	kW	Positive
3	33	TEL4522P3-33000

Dimensions: mm

