

12V–500V 15KW 3-Phase AC-DC Front-End
19" 6U Power Rackmount System
PS-19xx Rack and PS-12xx Rectifier
Advanced Parallel Operation



Product Description:

The PS-19xx high power/high voltage system is a 19" power chassis that uses internal fans for cooling. It includes up to nine PS-12xx 1,600 watt rectifiers in hot pluggable and power share N+1 configurations. The chassis delivers power up to 15KW and provides configurable output voltage in the range of 12V to 500V.

Key Features:

- Ideal for OEM applications
- Low EMI, high efficiency
- Modular structure, high reliability, high maintainability
- Meets EN 55011 standard for conducted and radiated Class A devices
- Meets Mil-STD-461 standard for military applications
- Supports a wide range of popular worldwide 3Ø AC inputs (200Vac or 400Vac)
- Output voltage up to 500V, output current up to 1,000 amps
- “Advanced parallel” configuration of up to four identical units
- Modifiable voltage and output power upon customer request
- Minimum active power factor of 0.98 on all AC inputs
- I²C bus interface option
- Three year warranty

PS-12xx Rectifier Model Options

Model	Input Voltage	I-out max	V-out max	P-out max	Output Connector
PS-1212	Wide 3Ø AC	1000A	12V	12KW	Fujicon E2077E-10
PS-1225	Wide 3Ø AC	480A	25V	12KW	Fujicon E2077E-10
PS-1248	Wide 3Ø AC	312A	48V	15KW	MS3102E-36-4S
PS-1256	Wide 3Ø AC	268A	56V	15KW	MS3102E-36-4S
PS-1270	Wide 3Ø AC	214A	70V	15KW	MS3102E-36-4S
PS-1210	Wide 3Ø AC	150A	100V	15KW	MS3102E-36-4S
PS-1215	Wide 3Ø AC	100A	150V	15KW	MS3454W24-22S
PS-1220	Wide 3Ø AC	75A	200V	15KW	MS3454W24-22S
PS-1225	Wide 3Ø AC	60A	250V	15KW	MS3454W24-22S
PS-1230	Wide 3Ø AC	50A	300V	15KW	MS3454W24-22S
PS-1232	Wide 3Ø AC	46A	320V	15KW	MS3454W24-22S
PS-1238	Wide 3Ø AC	39A	380V	15KW	MS3454W24-22S
PS-1242	Wide 3Ø AC	35A	420V	15KW	MS3454W24-22S
PS-1250	Wide 3Ø AC	30A	500V	15KW	MS3454W24-22S

Product Specifications

Input

- Input Voltage: 380–440Vac, 3 ϕ , 47–63Hz
180–253Vac, 3 ϕ , 47–63Hz
- Input Current: 40A for 12KW & 200Vac
24A for 15KW & 400Vac
- Power Factor: 0.98 typical at full load
- Inrush Current: Not to exceed full rated input current

Output

- Output Power: 15KW/12KW
- Output Voltage: Configurable from 12Vdc to 500Vdc
- Polarity: Floating
- Efficiency: Typical 88% at full load
- Line Regulation: $\pm 0.1\%$ maximum at full load
- Load Regulation: $\pm 0.5\%$ maximum at 10%–90% load
- Ripple Noise: $\leq 1\%$ p-p Max at 20 MHz bandwidth with 1 μ F ceramic and 10 μ F electrolytic on measure point
- Initial set point tolerance: $\pm 1V$
- Overshoot & Undershoot: Less than 1% at turn on-off
- Turn On Rise Time: Soft start 1000mSec typical
- Hold-Up Time: 5mSec typical
- Switch-On Time: 500mSec typical

Signals (15Pin D-Type)

- Current Monitor
- Voltage Monitor
- Inhibit
- DC Fail
- AC Fail

Protection

- Over-current/short circuit-protection: 105% to 120% of maximum constant current (I) limit
- Over-Voltage Protection: Latch shut down at 110–125%
- Over-Temperature Protection: Latch shutdown due to excessive ambient temperature
- Short Circuit
- AC Fail

Front Panel Indicators and Commands

- DC OK: Green LED illuminates for AC O
- FAILURE: RED LED illuminates for FAILURE
- RESET: Power Supply Reboot – Momentary Switch
- Voltage Meter (VOLTS): Measure Output Voltage (V)
- Current Meter (AMPS): Measure Output Current (I)

Environment

- Temperature: -20°C to $+50^{\circ}\text{C}$, $2.5\%/^{\circ}\text{C}$ from 50°C
- Storage: -40°C to $+85^{\circ}\text{C}$
- Humidity: Operating 10–90%RH, storage 10–95%RH
- Cooling: Internal fans
- EN61000-3-2: Harmonics
- EN61000-3-3: Voltage fluctuation
- EN6000-4-2: ESD +8KV AIR +4KV contact discharge
- EN61000-4-3: Radiated immunity of 80–1000Mhz 3V/m, AM 80%
- EN61000-4-4: Transient 1KV for AC power port, 0.5KV for DC I/O
- EN61000-4-5: Surge 2KV common mode and 1KV differential mode
- EN61000-4-6: 3VRMS, 80% A.M. BY 1kHz
- EN61000-4-8: 3A /m at 50Hz, performance criteria A
- EN61000-11: Voltage dips and interruption: 30% reduction for 10mSec Criteria-B, 60% reduction for 100mSec Criteria-C, 95% reduction for 5000mSec Criteria-C

Safety, Regulatory, and EMC Specifications

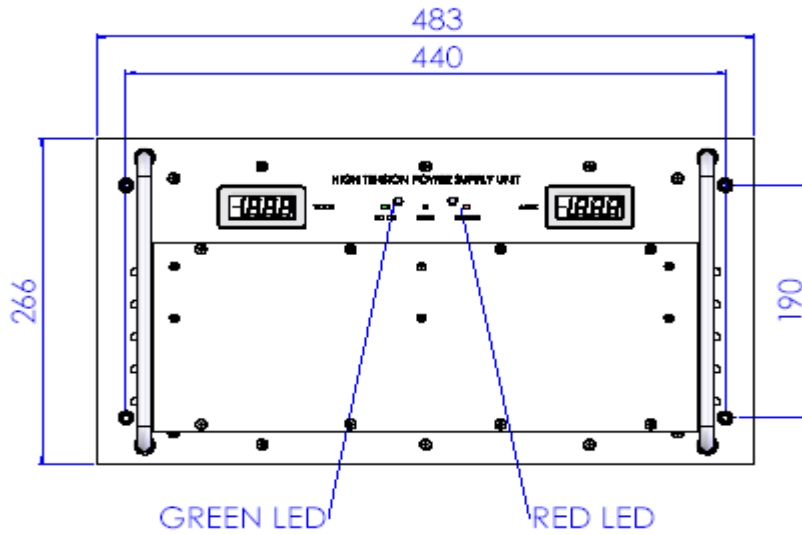
- Meets FCC Class A, CISPR 22 Class A, EN55022 Class A standards
- Input to Case: 3500Vdc
- Input to Output: 4200Vdc
- Output to Case: 1000Vdc
- Insulation resistance: $>10\text{M}\Omega$ at 500Vdc
- MTBF: 100,000 hours minimum per BELCOR 332, issue 6 specification at 30°C

Mechanical

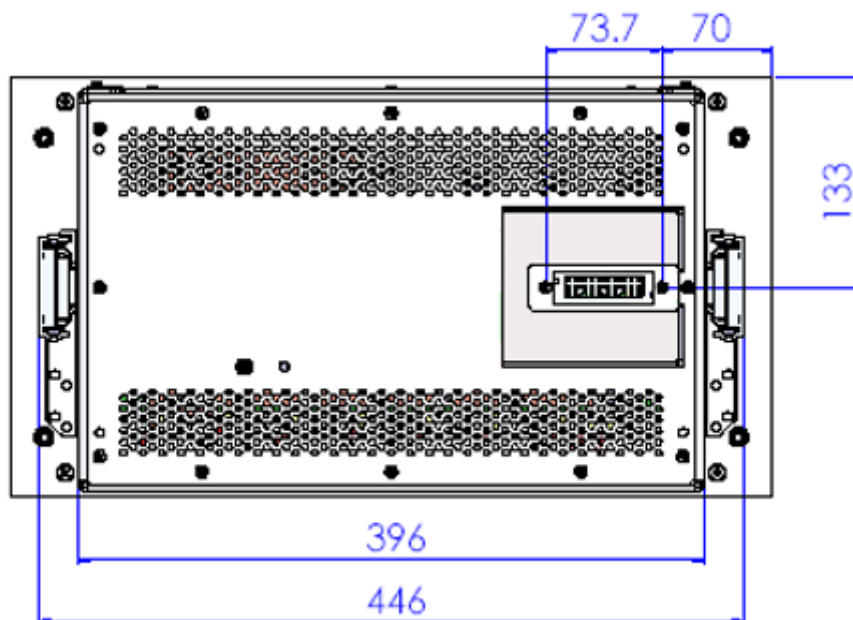
- Size: (W x H x D): 323mm x 104mm x 146mm
- Weight: 60Kg
- Input /Output Connector: Positronic PLC30M10140/AA + MC112N-14
- Mating Connector: Positronic PLC30F1000/AA + FC112N2/AA

Outline Drawing

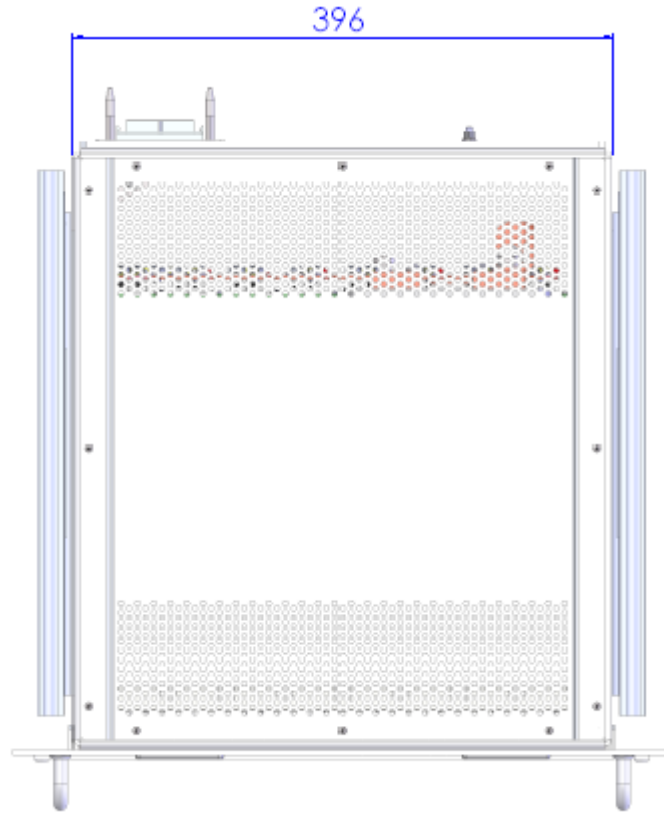
FRONT VIEW



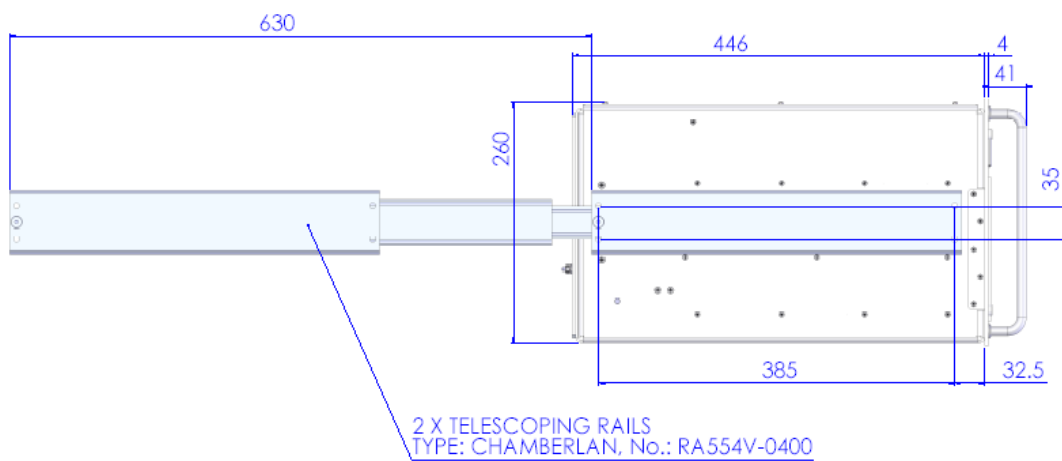
REAR VIEW



TOP VIEW



SIDE VIEW



Rear View Product Images

Option I



Option II

