

POWER PERFECT BOX – SUPER DUTY

GEN III SINGLE-PHASE ELECTRICITY CONDITIONER



Manufacturing Accreditations



Accreditation Description /Code

Made in USA • UL - E337361 - 3ZJ9 Energy Management Equipment
FCC - Approved (UL Tested for Compliance) CE - Low Voltage
Directive 2006/95/EC • CE - Electromagnetic Compatibility (EMC)
2004/108/EC • RoHS - Lead-Free - Restriction of Hazardous Substances

Gen III SATIC PowerPerfect Circuit Module Models ES1PN + ES1PP Product Features and Benefits

Feature

- interference (EMI/RF) noise reduction 0-50 dB
- voltage modulation
- three-way electrical protection
- self-healing metalized harmonic rectifiers
- robust tri-circuit integrated surge protection
- corrects current phase quality

Benefits

- low electromagnet field radiation (EMF/EMR)
- low total harmonic distortion (THD)
- all three electrical pathway production
- long life
- built-in surge and EMP protection
- power factor correction



Gen III SATIC PowerPerfect Specifications

circuit configuration 1
max AC voltage component rating
power-loss rating
input frequency
wire rating
current requirements @ 120/240 volts
enclosure
operating temperature
operating humidity
operating altitude up to 16,000 ft
seismic withstand capability

20/240 V split phase power conditioner
300 V rating
< 0.5 W per 1000 VAR
50/60 Hz
600 V THHN, 15 AWG terminated to 15 A DP
3.52 A (L1 & L2), 0.34 A (N)
14" x 7.25" x 4" NEMA 4X indoor/outdoor
-55°C to +90°C
5% to 95%, noncondensing
(5000m)
IBC 2021, CBC 2021, UBC Zone 4

Harmonic Rectifier Circuit Details

total unit reactive power @ 300 V (L1-L2 + L1-N + L2-N) + 3* (L1-L2)
per-circuit reactive power @ 300 V (L1-L2, L1-N, L2-N) + 3* (L1-L2)
reactive bank composition

120 μ F $\rightarrow$ 1.5 kVar
20 μ F L-N $\rightarrow$ 0.3 kVar, 60 μ F L-L $\rightarrow$ 1.2 kVar
36 PFC modules ES1PN + 36 PFC modules ES1PPP

Harmonic Dissipations - PFC Module Specifications

tangent of loss angle: $C > 1 \mu$ F at 1 kHz
rated voltage pulse slope (dV/dt)
RC between leads
withstanding (DC) voltage (cut-off current 10 mA)
EMI/RMI filtering attenuation
protection modes

$\leq 30 * 10^{-4}$
150 V/ μ s
>5000 s
1850 V
Up to 50 dB from 10 kHz to 100 MHz
(L1-L2 + L1-N + L2-N) + 3*(L1-L2)

Surge & EMP Suppression

A/C voltage max (Continuous)
D/C voltage max
A/C voltage max (Max Clamping)
Current max peak (Peak Surge)
protection modes (dual tri-circuit integration)
transient dissipation potential each circuit (surge energy)

150v (L1-N, L2-N) 250v (L1-L2) VRMS
424v VDC
650v VRMS
6500A A
L1-L2, L1-N, L2-N@150v + 3*(L1-L2)
1,300 per pathway * 6 = 7,800 J / μ s