



The SCIENCE Behind The MPTS

Maximum Power Transfer Solution Technology



US Patent No. 12/525,235



Schedule
Contract GS21F054BA

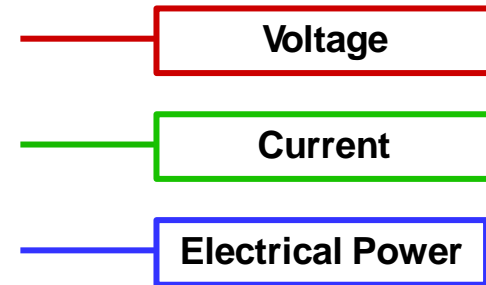
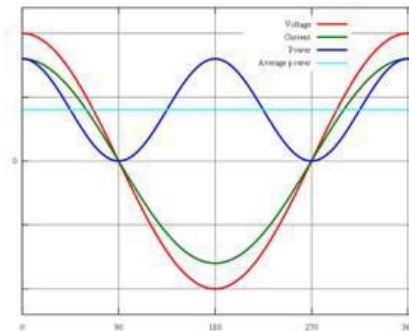
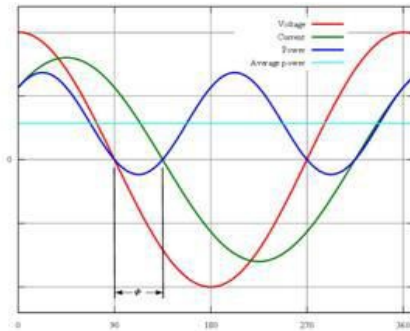
info@VenergyGroup.com | 866-977-7555 | Visit us at www.VenergyGroup.com

The Science

Maximum Power Transfer Theorem (Jacobi's Law - 1840) focuses on increasing total electrical efficiency by decreasing losses using impedance matching.

For maximum electrical power transfer to occur from the source to the load:

- The phase angle on each phase should be zero



- When Phase Angle is zero (0),

$$\mathbf{KVA=KW}$$

$$\mathbf{KWH = KVAH}$$

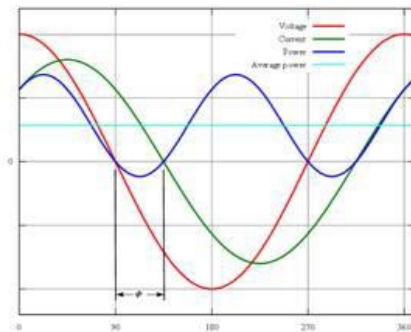
- When Phase angle is zero, amperes (**A**) will decrease
- When amperes (**A**) decrease – total energy consumption will decrease



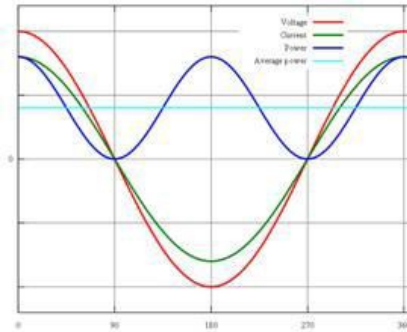
MPTS TECHNOLOGY



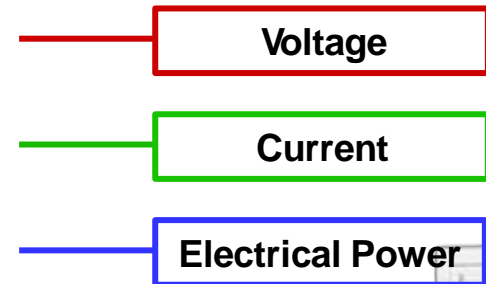
The technology used in our MPTS - Maximum Power Transfer Solution device is based on patented dynamic impedance matching, synchronous processing through proprietary advanced power switching, dynamic, accurate and precise correction using patented multi-tasking algorithms to optimize each phase independently to attain maximum efficiency.



Without MPTS



With MPTS



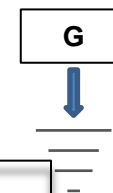
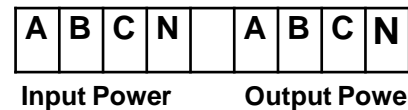
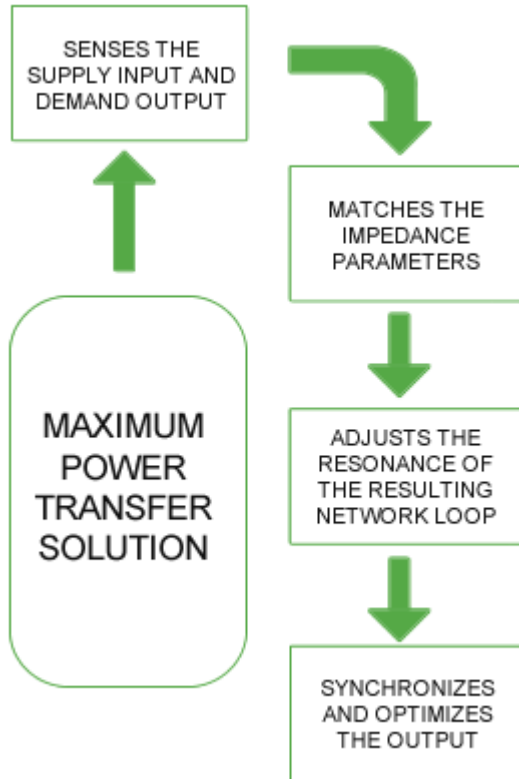
When connected to electrical AC inductive and other balanced or unbalanced phase loads, our device dynamically matches the source and load impedances resulting in reduced total electrical power consumption and significant electrical efficiency improvement.



MPTS TECHNOLOGY



Inside the MPTS



A/B/C - Incoming lines / phases
 N - Neutral
 G - Grounding



MPTS TECHNOLOGY



Inside the MPTS



Operation security and safety with key switch enables maintenance department to ensure uninterrupted safe operation in select mode.



Equipped with easily replaceable, modular type over current/surge protective devices and protection fuses for enhanced equipment safety and to minimize downtime.

High fault protection MCCB with 65 kA rating used for enhanced safety.

Current transformers, potential transformers, and all similar critical devices internally used are powered by energy limiting transformers.

Easily traceable, labeled wires for simple troubleshooting and easy replacements



MPTS TECHNOLOGY



Inside the MPTS



Hinged enclosure panels for easy inspection and maintenance

Separate section for harmonic filters in MPTS-H models

Easily cleanable/replaceable filters

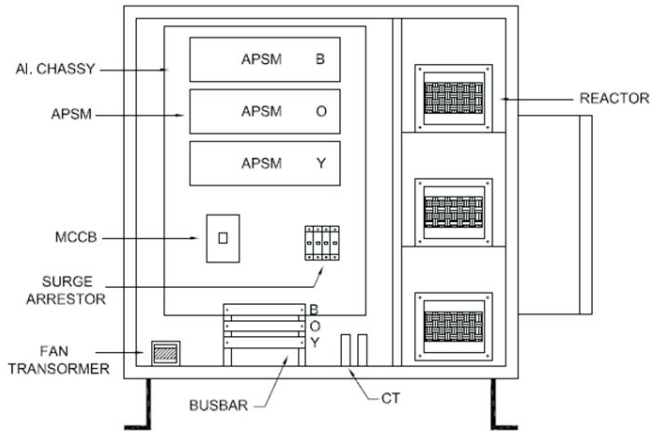


MPTS TECHNOLOGY

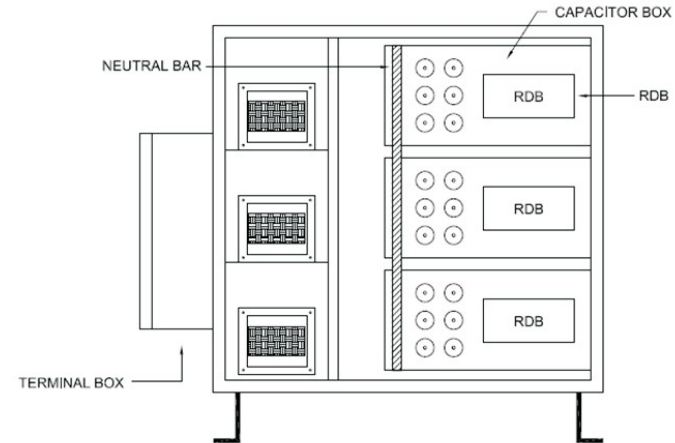


Inside the MPTS

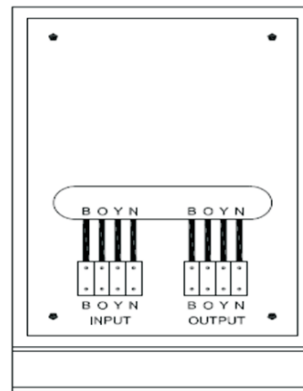
RIGHT-SIDE OPEN VIEW



LEFT-SIDE OPEN VIEW



BACK OPEN VIEW



A/B/C- Incoming lines / phases
 N - Neutral
 G- Grounding



480V/3Ph/100Amp Module
 Multiples of the same for
 Scaled up versions
 example: 225, 450

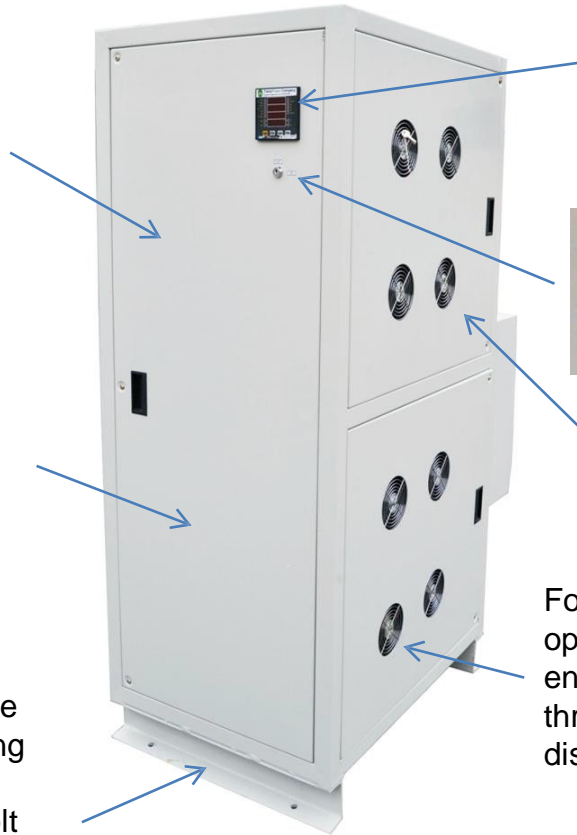
MPTS TECHNOLOGY



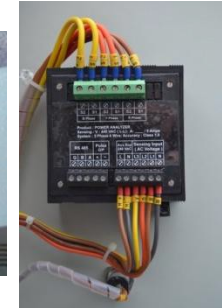
Strong, long-lasting, heavy duty enclosure with internally optimized architecture for optimal ventilation, inspection, and quick maintenance.

Durable heavy duty steel enclosure with quality powder coating to withstand harsh industrial environment.

Bottom frame lifting base for easy lifting/positioning during installation and provided with anchor bolt slots to allow securing to foundation for permanent installation.



Automatic and self regulating operation with an informative energy meter to display all important parameters.



Forced air ventilation optimizes equipment to ensure longevity through regulated heat dissipation.



Salient Design features of MPTS Units

- ✓ Automatic and self-regulating operation with an informative Energy meter to displays all important parameters
- ✓ Conservatively designed high quality UL approved components used in all key areas provide enhanced performance and reliability
- ✓ Equip with easily replaceable, modular type over current/surge protective devices and protection fuses for enhanced equipment safety to minimize downtime
- ✓ Strong long lasting heavy duty enclosure with Internally optimized architecture for optimal ventilation, inspection and quick maintenance
- ✓ Forced air ventilation optimizes equipment longevity through regulated heat dissipation.
- ✓ Thermal switches installed at strategic locations for enhanced thermal protection to ensure safe shutdown of operation in case of accidental blocked/obstructed ventilation
- ✓ Lead wires, Lugs and terminations used are UL certified rated for 125 deg C for additional safety.
- ✓ Durable heavy duty steel enclosure with quality powder coating to withstand harsh industrial environment.
- ✓ Hinged enclosure panels for easy inspection and maintenance



MPTS Partial Client List



Underwriters Laboratory (UL)	Test Equipment – Save energy and protect test equipment
National Grocers, CO, USA	Freezer Racks - Protect compressors and save energy
GSA Federal Center, CO, USA	Chilled Water Pump - Increase efficiency and life
Hillcrest Hospital, OK, USA	Cooling Tower - Increase efficiency and save energy
Denver International Airport, CO	Save energy, go green, increase efficiency
School districts, CO	Increase efficiency and save energy
Kaiser Permanente Hospital, CO	HVAC
Miami Dolphins Stadium, Miami, FL	Increase efficiency and save energy
Rabine Group, IL, USA	Elevators, Pump Sets, and Transformer
St. Vincent Hospital, CA, USA	Indoor Parking Lot - Increase efficiency and save energy
Water Filtration Plant, CO, USA	Pumps – 24 hr pump increase efficiency and life

