APC Next Generation Rack ATS

Automatic switching power redundancy for single corded equipment.



Next Generation Rack ATS with multiple outlets eliminate the need for a secondary Rack PDU downstream of Rack ATS.

> Seamless power transfer
> Continuous source monitoring
> Current monitoring and alarms
> Robust out-of-phase switching with firmware revision 357 or greater
> Network management interface
> Multiple outlets

The APC Rack Automatic Transfer Switch (ATS) is a high availability switch that provides redundant power to connected equipment and has two input power cords, one for each AC source. The Rack ATS supplies power to the connected load from a primary AC source. If that primary source becomes unavailable, the Rack ATS automatically transfers loads to the secondary source. The transfer time from one source to the other is seamless to the connected equipment, as the switching occurs safely between the two input sources regardless of any phase differences. The units have built-in network connectivity, which allows for remote management through Web, SNMP, or Telnet interfaces.

With the Next Generation of Rack ATS, end users can take advantage of many new features. With multiple outlets, several devices can be plugged directly into the Rack ATS without the need for an additional Rack PDU. Current monitoring and alarms help prevent downtime to the equipment by providing aggregate current measurements and warnings when power consumption draws near the maximum rating of the Rack ATS. Built-in network and local interfaces allow for custom configuration settings for added flexibility. The Rack ATS product family includes a variety of input and output connections to distribute 100/120V, 200/208V, or 230V power to multiple outlets. Having a variety of inputs and outputs allow users to adapt to varying power distribution requirements.

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Rack ATS Features

Front Panel interface



Source availability indicators

Aggregate current metering display and overload warnings locally and via network

User source preference selectable both locally and via network

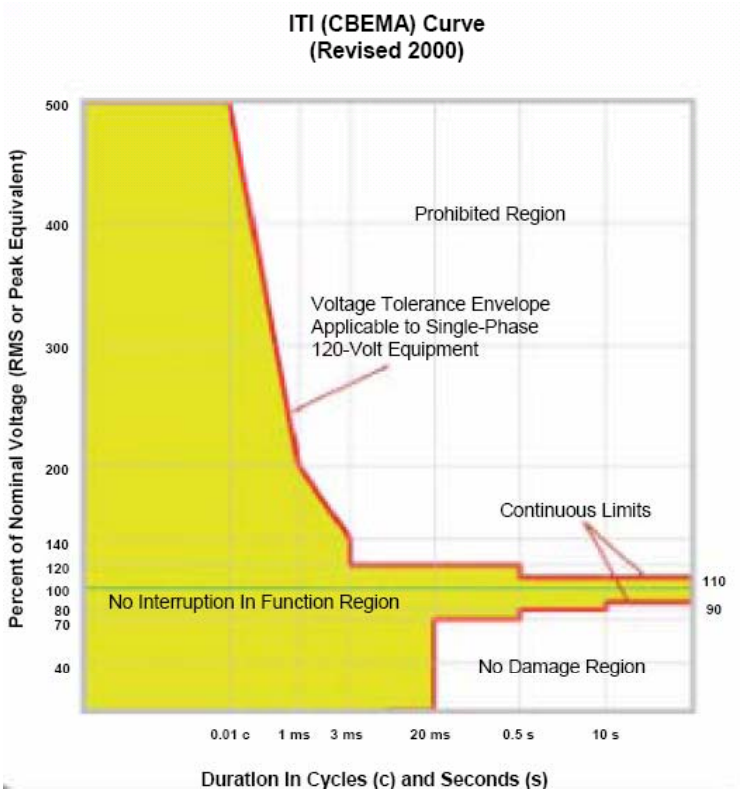
Network Management; Access, configure, and manage units from remote locations via Web, SNMP, and Telnet

Seamless power transfer

APC Rack ATS units switch power seamlessly to IT equipment. Per the ITI Curve, typical power supplies will operate 20ms after AC voltage drops to zero. The IEEE 1100-1999 standard also references the ITI curve. The SSI (Server System Infrastructure) standard recommends a hold-up time for power supplies to be a minimum of 21 ms for a voltage range of 100-240V.

APC Rack ATS units switch sources under these industry standard times. The switching time includes the time for the built-in intelligence to determine whether the voltage and frequency are in range. Any point of failure in the electronics does not cause a drop out of the output voltage because the unit incorporates redundancy of its electronic circuitry to avoid fault tolerance.

- 8 - 12ms typical
- 16ms max at 60 Hz when configured to high sensitivity
- 18ms max at 50 Hz when configured to high sensitivity



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Rack ATS Features

Robust out-of-phase switching

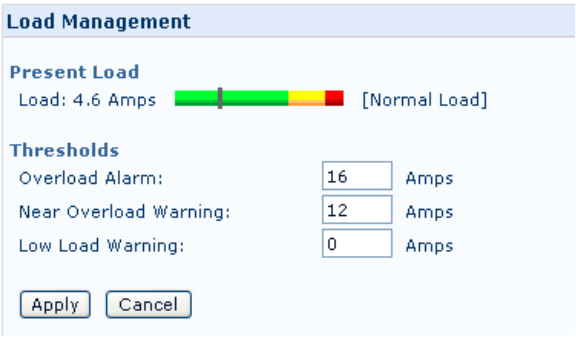
To prevent relay welding, both hot and neutral lines are switched using a break-before-make system so there is no cross-connection of sources, regardless of the phase between sources.



- AC sources are isolated prior to switching outputs, eliminating the chances of relays welding at contacts
- Sources can be up to 180 degrees out-of-phase
- **** Firmware revision 357 or greater must be installed ****

Current monitoring and alarms

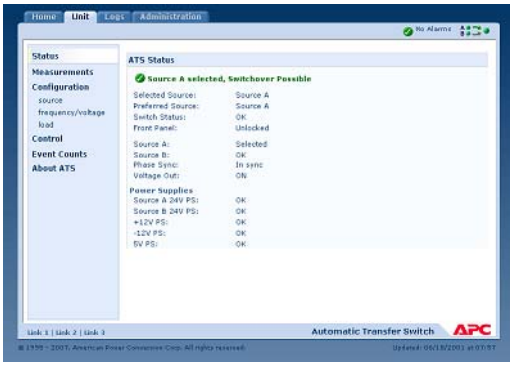
Current monitoring and alarms help prevent downtime by providing aggregate current measurements and warnings when power consumption draws near the maximum rating of the Rack ATS.



- Aggregate current metering display
- Overload warnings locally and via network
- Fully customizable settings

Continuous source monitoring

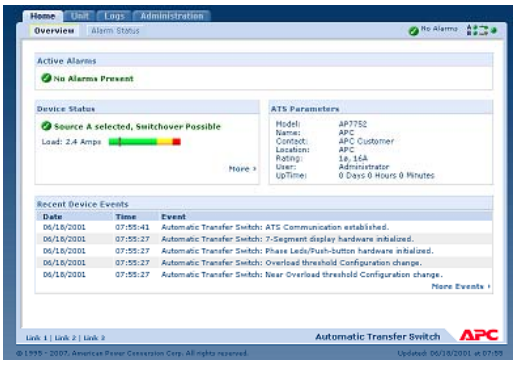
With a built-in intelligent interface, APC Rack ATS units can monitor both sources for voltage and frequency fluctuation.



- "Real time" monitoring of input voltage and frequency
- Auto detection of nominal frequency
- User Configurable voltage and frequency range settings

Network management interface

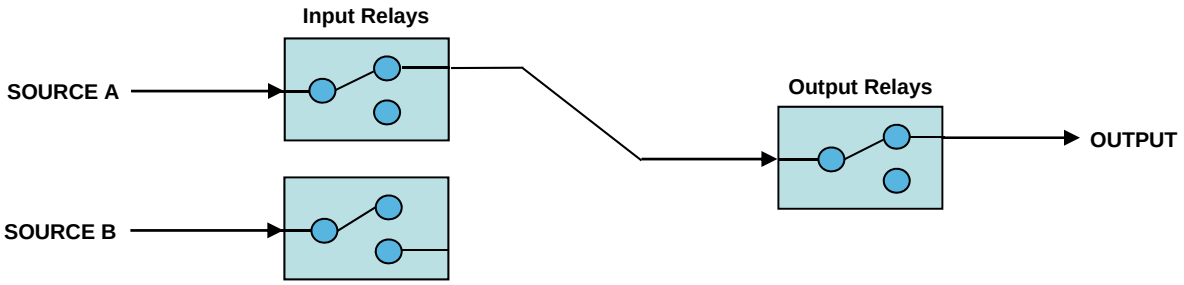
User interface allows remote access to unit status and settings locally and remotely. Fully configurable menu options give users the flexibility to set unit options.



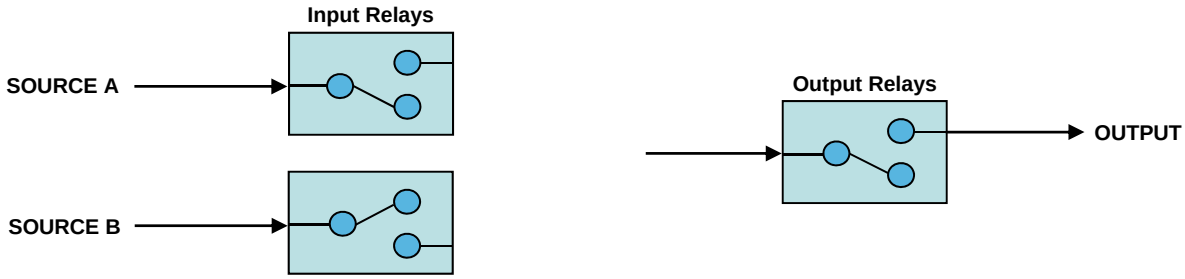
- Access via Web (ethernet), telnet (serial), and SNMP
- Compatible with APC InfraStruxure Management Devices
- Built in network management card

“Break Before Make” Switching Sequence

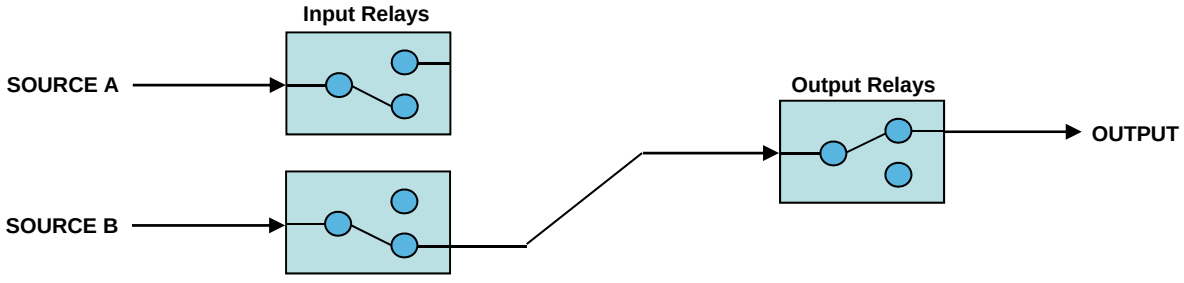
NOTE: Each relay block shown below represents two relays, each breaking individual lines (including neutral).



Source A is providing power to the outlets, while Source B is isolated from the system.



Firmware detects that source A is out of the user specified tolerance range. The input power from Source A is removed, then the output is disconnected. This eliminates the chances of a relay welding and allows for out-of-phase switching. (via firmware version 357 or greater) Crucial timing is controlled through the firmware.



Relays are engaged and power is transferred to source B. Total transfer time is 8-12 ms (typical).

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