Automatic transfer switch

**TSi** Power’s ATs Series user customizable automatic transfer switches (ATS) are for enabling the use of redundant power sources, such as small uninterruptible power systems feeding industrial controls, PLC cabinets, internet servers, telecom systems, etc.

**Typical ATs applications**

Designed for situations where reliability and predictability matter to the enterprise.

Examples: telecommunications equipment, rectifiers, cell sites, file servers, routers, digital copiers, office machines, industrial controllers (PLC), automatic test equipment (ATE), laboratory analyzers and other sensitive, specialized microprocessor-based equipment.

**Key ATs benefits**

If the ATs DIP Switch is set to “Fast transfer” (20ms typical transfer time) mode, then when redundant power sources are present, it can replace an expensive UPS system and battery banks for most computers, telecommunication, and industrial equipment (since switchmode power supplies used in most new electronics equipment provide a minimum of 20ms in capacitor hold-up time under full load conditions).

If a ‘positive power break’ is needed during the transfer, then the ATs may be set to “Slow transfer” (1 second) mode to ensure a full 1 second ac power outage during transfer.

Also, the two ac sources do not have to be synchronized since the ATs is designed to switch between two asynchronous ac sources without damage to itself or to equipment powered by switchmode power supplies.

**How the ATs works**

The ATs is fed by two independent ac power sources. When the primary power source detector circuit senses a loss of power on the primary circuit, it immediately switches the load over to the backup power source feed in less than 20ms. Upon restoration of primary power, the ATs will switch back in less than 20ms. This is fast enough to be invisible to computer switch-mode power supplies.

**Key ATs features**

- Enables redundant UPS, backup generators or other ac power sources to be used for a single load.
- Less than a 20ms transfer time from source A to source B.
- User selectable transfer times of 20ms, 40ms or 1 second.
- Built-in circuit breakers
- Designed to handle out-of-phase and/or asynchronous ac sources
- Rack-mountable
- LED status indicators
- DB9 communications interface
- Audible alarms with enable/disable switch

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**Model**

- ATs-1000
  - 30 amperes
  - 3600 VA
  - 3600 watts
  - 120 volts
  
- ATs-1000-40A
  - 40 amperes
  - 4800 VA
  - 4800 watts
  - 120 volts

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## Specification

<table>
<thead>
<tr>
<th>ATs-1000 (30A)</th>
<th>ATs-1000-40A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td><strong>Electrical</strong></td>
</tr>
<tr>
<td>Capacity in VA (watts)</td>
<td>3600VA (3600W) maximum</td>
</tr>
<tr>
<td>Switching technology</td>
<td>Solid-state relays (SSR’s)</td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td><strong>Input</strong></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>120 volts ac single phase</td>
</tr>
<tr>
<td>Primary ac voltage</td>
<td>95 – 135 volts ac</td>
</tr>
<tr>
<td>Backup ac voltage</td>
<td>95 – 135 volts ac</td>
</tr>
<tr>
<td>Frequency range</td>
<td>47 – 63 Hz</td>
</tr>
<tr>
<td>Over-current protection</td>
<td>User resettable circuit breaker</td>
</tr>
<tr>
<td>Circuit breaker ratings</td>
<td>30 amperes</td>
</tr>
<tr>
<td>Typical transfer time</td>
<td>Via an internal four position DIP switch (factory set at 20ms)</td>
</tr>
<tr>
<td>Transfer time selection</td>
<td>20ms, 40ms or 1000ms (user selectable)</td>
</tr>
<tr>
<td>Input/output wire size</td>
<td>10mm² (AWG8) minimum</td>
</tr>
<tr>
<td>Ac input</td>
<td>Hardwire terminals (optional ~ plugs and receptacles)</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td><strong>Output</strong></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>120 volts ac, single phase</td>
</tr>
<tr>
<td>Load regulation</td>
<td>Better than 2% from no load to full load</td>
</tr>
<tr>
<td>Power efficiency</td>
<td>98% or higher</td>
</tr>
<tr>
<td>Ac distribution</td>
<td>Hardwire terminals (plugs and receptacles optional). Hardwired units must be installed by a qualified electrician.</td>
</tr>
<tr>
<td><strong>Indicators</strong></td>
<td><strong>Indicators</strong></td>
</tr>
<tr>
<td>Green LED for primary ac presence, yellow LED for backup ac presence, flashing red LED for loss of primary or backup ac.</td>
<td></td>
</tr>
<tr>
<td>Audible alarms</td>
<td>Buzzer beeps when loss of primary or backup ac occurs.</td>
</tr>
<tr>
<td>Audible alarm switch</td>
<td>Audible alarm (buzzer) and enable/disable switch.</td>
</tr>
<tr>
<td>Alarm contacts</td>
<td>A rear-mounted DB-9 connector sends loss of primary ac and loss of backup ac signal for external power status monitoring.</td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td><strong>Physical</strong></td>
</tr>
<tr>
<td>Dimensions</td>
<td>406mm (16”) wide x 83mm (3.25”) high x 305mm(12&quot;) deep</td>
</tr>
<tr>
<td>Weight</td>
<td>7kg (15 lbs)</td>
</tr>
<tr>
<td>Rack mount options</td>
<td>Front mount kits: For a 19” rack: use # MK-5019A For a 23” rack: use # MK-5023A For a 24” rack: use # MK-5024A</td>
</tr>
<tr>
<td>Center mount kits: For a 19” rack: use # MK-5019F For a 23” rack: use # MK-5023F For a 24” rack: use # MK-5024F</td>
<td></td>
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<tr>
<td>Wall or floor mount kits: use # MK-5000C</td>
<td></td>
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</tbody>
</table>

### Environmental

| Ambient temperature | 0⁰ to 40°C (32° to 104°F), 10 to 90% relative humidity (non-condensing). |

### Warranty

<table>
<thead>
<tr>
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<td>Two year limited warranty, parts and labor.</td>
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