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The emergency shutdown procedure is on the inside rear cover

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DANGER
Risk of Electrical Shock

To reduce the risk of electrical shock and to ensure the safe operation of the ATS/GTS, the symbols below are used throughout this manual. Where they appear, only qualified personnel should carry out these instructions.

A dangerous voltage exists in this area. Use extreme caution at all times.

Attention: Important operating instructions. Follow them exactly.
1 Safety Checklists

The ATS and/or GTS are to be installed by people trained in the safe use of high-energy power supplies and their batteries. Also assumed is knowledge of the local electrical code(s) and their safe application.

**DANGER: NEVER** let water from rain, a hose, tap or a sprinkler’s output, road splash or other water sources enter the enclosure of the ATS/GTS to prevent accidental shorts, shocks or electrocutions.

**DANGER:** This unit does NOT have an on/off switch. Whenever it is connected to line or battery power, power is present at the output. Use extreme caution at all times.

- Do not work alone under hazardous conditions.
- Read this manual. If you have any questions about safe installation, operation or maintenance, contact Alpha Technologies’s customer service department.
- Use this manual together with the Operator’s Manual of the UPS.
- Carefully unpack the components. Report any shipping or other damage at once.
- **Always** assume electrical connections or conductors are live. Turn off all circuit breakers and double-check with a voltmeter before performing installation or maintenance.
- Before installation, verify the input voltage and current requirements of the load are met by the UPS’s output (See specifications). Verify the line voltage and current meet the UPS’s input requirements.
- The ATS/GTS have more than one live circuit. AC power may be present at their outputs even if the UPS is disconnected from line or battery power.
- The ATS/GTS can be operated to a maximum operating temperature of 55°C. **Also see** the specifications section for temperature ratings.
- At high ambient temperature conditions, the enclosure’s surface can be very hot to the touch.
2 Overview

The Automatic Transfer Switch (ATS) (Figure 2.1) and the Generator Transfer Switch (GTS) (Figure 2.2) are optional add-on switching units specifically designed for (but not limited to) the FXM family (FXM 650, 1100, 1500 and 2000) and the Novus Micro family (Micro 300/600/1000, Standard, XL and XL3) of UPS. These switching units provide power and/or bypass capacity (automatic or manual) so that the operator may safely disconnect the UPS from line or generator power for easy removal and servicing. In bypass mode, the loads are directly connected to the line or generator power without any conditioning. The ATS and/or GTS allow the use of 3 different back-up sources (line, batteries and/or generator).

![Figure 2.1 Automatic Transfer Switch (ATS)](image1)

![Figure 2.2 Generator Transfer Switch (GTS)](image2)
3 Mounting the ATS/GTS

The ATS and GTS can be mounted as stand alone, chassis (e.g. on the external bottom enclosure of the Novus Micro family UPS) or rack (e.g. inside the end system enclosure of the FXM family UPS). The following diagrams illustrate some of the possible configurations.

Figure 3.1 – ATS mounting views (stand alone)

Figure 3.2 – ATS mounting view (chassis mounted)

Figure 3.3 – ATS mounting view (rack mounted)
Figure 3.4 – GTS mounting view (rack mounted)

Figure 3.5 – ATS & GTS mounting view (rack mounted)
Wiring the ATS/GTS to the UPS

The ATS/GTS should be wired to the UPS as shown in Figure 4.1 below.

⚠️ The ATS/GTS/UPS end system must be correctly grounded for proper operation.

Older facilities may have inadequate electrical grounding. Inspection must be performed by a qualified electrician before installation to ensure that grounding meets the local electrical code.

⚠️ To provide branch circuit protection, the utility line attached to the ATS/GTS/UPS’s input MUST be protected by a circuit breaker certified for this use as per the local or national electrical code.

The breaker’s minimum size is calculated by the following formula:

Minimum Breaker Size = UPS’s maximum input current / 0.8

The unit’s maximum input current is read off of the UPS’s nameplate. For example, if the nameplate gives the maximum input current as 25A, the circuit breaker should be rated at least 30A.

⚠️ The input and output lines to and from the ATS/GTS/UPS system MUST have disconnect devices attached.

⚠️ If stranded wires are used, ferrules or equivalent crimping terminals must be used.

Figure 4.1 – ATS/GTS to UPS Wiring Diagram
ATS

- With SW1 & CB1 On – Unit is in UPS Mode
- With SW1 Off, CB1 On – Unit is in Bypass Mode
- With SW1 On, CB1 Off – UPS Inverter is supplying power (Not recommended)
- With SW1 & CB1 Off – Unit is in Bypass – Service Mode

Figure 4.2 – ATS schematic diagram

GTS

- With SW1 On – Automatic Generator Transfer is Enabled
- With SW1 Off – Generator Transfer is Disabled

Figure 4.3 – GTS schematic diagram
Figure 4.4 – ATS & GTS Schematic diagram

⚠️ Servicing the UPS

- ATS: Turn off CB1, SW1 and battery CB of the UPS.
- GTS (UPS connected to Line Out): The main source branch CB protection coming either from Generator or Line has to be turn-off. Likewise, battery CB of the UPS has to be turn-off.
- ATS and GTS combine: Turn off CB1, SW1 and battery CB of the UPS.

Other Note:
- Simplex 5-15R receptacle is for 120V (rated 5A) only.
- 2 position mate and lock connector is for 230V only.
### ATS/GTS – Mechanical Specifications

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H x W x D</td>
<td>3.25 x 5.3 x 4.5</td>
</tr>
<tr>
<td></td>
<td>(82 x 135 x 114)</td>
</tr>
<tr>
<td>Weight, lb (kg)</td>
<td>3 (1.36)</td>
</tr>
<tr>
<td>Material</td>
<td>sheet metal, 1.2 mm thick</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
<tr>
<td>Mounting options</td>
<td>Stand alone, chassis or rack mounted</td>
</tr>
</tbody>
</table>

#### Connections
- Line In: 2 position TB Weco #327-HDS-02 or equivalent.
- Line Out: 2 position TB Weco #327-HDS-02 or equivalent.
- From UPS or Gen: 3 position TB Weco #324-HDS-03 or equivalent.
- To UPS: 3 position TB Weco #324-HDS-03 or equivalent.

#### Recommended Wire Size
- Line In: AWG #14 – #6 AWG
- Line Out: AWG #14 – #6 AWG
- From UPS or Gen: AWG #22 – #10 AWG
- To UPS: AWG #22 – #10 AWG

*Note: Terminate all stranded wires with ferrules or equivalent crimp terminals.*

#### Humidity
- Operating (non-condensing): Up to 95% (RH)
- Storage: Up to 95% (RH)

#### Temperature Range, °C
- Operating: –20 to 55°
- Storage (non-operating): –40 to 75°

* Capable of operating up to 75°C for 8 hours

#### Altitude, ft (m)
- Operating: Up to 12,000° (3658)
- Storage (non-operating): Up to 15,000 (4572)

* De-rate 2°C per 1000 ft above 500 ft. >15000 ft

### ATS/GTS – Electrical Specifications

#### Input
- Voltage (nominal), VAC: 120 or 230
- Frequency, Hz, ±5%: 50/60
- Current, Amps (@ nominal Vin): 30/16 @120/230VAC
- Power, VA: 3600
- Power Factor: 0.8 to 1.0

#### Output
- Voltage (nominal), VAC: per UPS, Line or Generator
- Frequency, Hz, ±5%: 50/60
- Power, W/VA: 3600

#### Regulatory
- Electrical Safety: CSA 107.3–05
- Immunity: CE (for 230V version)
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Emergency Shutdown Procedure

The ATS/GTS does not have an on/off switch. Whenever it senses battery or line power, there is power present at the outputs and the unit is active.

1. Turn off the circuit breaker providing line power to the unit.
2. Disconnect the batteries from the UPS.
3. Turn OFF the attached generator (if connected).

For emergency technical support 7 days a week/24 hours a day, call:
USA: 1 800 863 3364        Canada: 1 800 667 8743
www.alpha.com

Complete the following for your records

Serial # __________________________________________
Options __________________________________________
Purchase Date ____________________________________

This Novus Micro Secure 100 was purchased from
Dealer __________________________________________
City ____________________________________________
State/Province_________________________________
Zip/Postal Code_________________________________
Country _________________________________________
Telephone # ________________________________
Fax # ________________________________
E Mail Address ________________________________