



START-UP GUIDE

TSI Power Model Number: **ATS-500 Series**



⚠ DANGER:
Make sure unit is de-energized before beginning.

⚠ CAUTION:
These instructions must be followed or board failure will result.

Caution: No user serviceable parts.

Caution: Only a trained engineer, electrician or technician should perform this procedure.

Caution: For personnel safety, remove metallic watches and rings.
Always wear protective eye glasses, insulated gloves and insulated shoes.

This is a quick reference start-up guide. Go to TSI Power's website or contact TSI directly to obtain the ATS-500 Series Product Manual. (TSI Power's contact information is on page 5.)

IMPORTANT SAFETY INSTRUCTIONS: SAVE THESE INSTRUCTIONS – This manual contains important instructions for the ATS-500 Series that should be followed during installation and maintenance of the ATS.

Please inspect the unit for visible shipping damage (such as damaged case or broken parts)

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SAFETY ALERTS - SAFETY SIGNAL WORD DEFINITIONS

This document contains safety alert pictorial Symbols and Words that point out areas and procedures that require special attention with regards to safety. These Symbols and Words are defined in ANSI Z535.4-1998, Product Safety Signs and Labels.

 **DANGER:**


DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING:**

WARNING indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

 **CAUTION:**

CAUTION indicates an imminently hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The safety alert pictorial symbol  appears in this document to make users aware of important operating and safety concerns.

Tools and Test Equipment Required

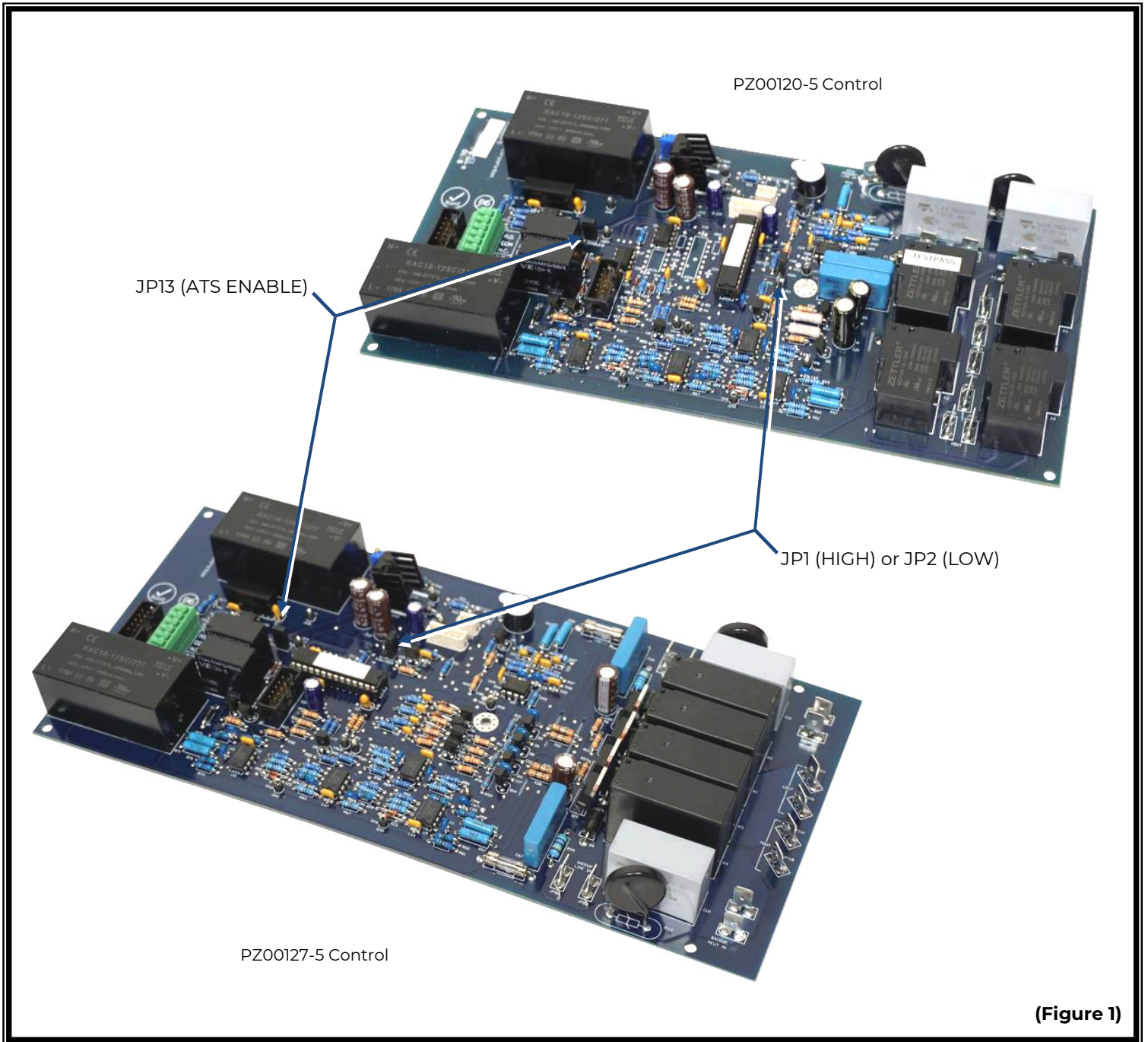
- Miscellaneous hand tools
- DMM (digital voltmeter)

Voltage Selection

1. If you have a 208, 220 or 240 V ATS the voltage range can be changed. The factory setting is either set to HIGH (220 to 240 V) or LOW (208 V) depending on ATS model ordered. If the factory preset is not desired, performing the following steps will change the voltage transfer points.
2. Make sure both Primary and Backup AC sources to the ATS are de-energized.
3. Remove the ATS case cover.
4. Locate the jumper at JP1 (HIGH) or JP2 (LOW). See figure 1.
5. To change the voltage selection simply move the Jumper from the JP1 (HIGH) to JP2 (LOW) position or JP2 (LOW) to JP1 (HIGH) position (depending on the factory preset of your ATS).
6. Replace the ATS case cover.

Remote Status / Alarm Monitoring

1. A DB-9 female connector in the rear of the unit provides status / alarm signals for remote monitoring of the status of the ATS.
2. Primary AC Input Status DB-9 Pins are: 5_NO 1_NC 2_COM
3. Backup AC Input Status DB-9 Pins are: 6_NO 3_NC 4_COM
4. When Primary AC Input is present and IN SPECIFICATION, there is an OPEN circuit between pin 5 and pin 2. When Primary AC input is OUT OF SPECIFICATION, there is a CLOSED circuit between pin 5 and pin 2.
5. When Backup AC Input is present and IN SPECIFICATION, there is an OPEN circuit between pin 6 and pin 4. When Backup AC input is OUT OF SPECIFICATION, there is a CLOSED circuit between pin 6 and pin 4.
6. Maximum voltage and current that can be used for monitoring the status and alarm of the ATS Series is 120 VDC (VAC), 1 A (maximum DB-9 connector rating).



⚠ CAUTION: The unit must be placed in a well – ventilated area to prevent risk of fire due to over-heating. Ventilation slots must not be obstructed.

⚠ CAUTION: The ATS must be protected by an upstream branch circuit protector, for both the Primary and the Backup, at 125% of the ATS current rating (the maximum input current rating as shown on the ATS product label) per the National Electric Code or per local electrical codes if outside of the United States.

Power-Up Procedure

1. Perform a visual inspection of the ATS-500 unit and verify that it is not physically damaged. Verify that the equipment label states correct voltage, frequency and amperage of the input & output AC power sources. Also, verify that the stated output voltage, frequency and amperage are compliant with the input power requirement of the load equipment to be powered by ATS-500.

 **CAUTION: Turn both switches marked as “Primary Input Breaker” and “Backup Input breaker” to OFF position.**

 **WARNING: Make sure that both Primary and Backup AC input wires are de-energized.**

2. Connect (or plug in) both the Primary and Backup AC input connections. For 15, 20 and 30 Amp hardwire units recommended tightening torque is 0.79Nm (7 in.-lbs), for 40 Amp hardwire units recommended tightening torque is 2.26Nm (20 in.-lbs).

 **CAUTION: Make sure that both Primary and Backup AC input voltages and frequencies match those specified on the product label affixed to the ATS unit. The ATS will only operate when the input voltage is within specification and when the input frequency is within $\pm 5\%$ of that specified. Both primary and backup must be the same nominal frequency.**

3. Turn on the Backup AC circuit breaker in the rear of the ATS unit. Make sure that the audible alarm switch (in front of the ATS unit) is in the "ENABLE" position.
4. The yellow LED should turn on and the alarm sound must turn ON (red alarm LED must turn ON; green LED must be OFF).
5. Turn on the Primary AC circuit breaker in the rear of the ATS unit.
6. The green LED must turn on after several seconds. Yellow LED must turn OFF. The audible alarm (sound) and red alarm LED must turn OFF.
7. Turn off the Primary AC circuit breaker. The green LED must turn off. The yellow Backup LED must turn ON. Red alarm LED and alarm (sound) must turn ON.
8. Turn on the Primary AC circuit breaker. After several seconds, ATS must return to normal operating condition as in step 6.
9. Turn off the Backup AC circuit breaker. The green LED must remain ON and the red alarm LED and alarm sound must turn on.
10. Turn on the Backup AC circuit breaker. After several seconds, ATS must return to normal operating condition as in step 6.

TESTING WITH ACTUAL LOAD EQUIPMENT (SUCH AS COMPUTERS, PLC, TELECOM EQUIPMENT, ETC.)

 **CAUTION: To avoid electric shock or accidents, ensure that both Primary & Backup AC sources are de-energized before making the wire connection to the AC sources.**

11. If the above test steps (1) through (10) are performed and the ATS is functioning properly, then actual load equipment can be connected (or plugged into) the output terminal block (or output socket) of the ATS. For 15, 20 and 30 Amp hardwire units recommended tightening torque is 0.79Nm (7 in.-lbs), for 40 Amp hardwire units recommended tightening torque is 2.26Nm (20 in.-lbs).
12. Perform steps 3 through 10 assuring that the load is operating properly.
13. End

Should you have any questions or encounter problems during the power up procedure, contact TSI Power's technical support staff immediately.

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International customers: +1-715-623-0636
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Factory address: 1103 West Pierce Avenue, Antigo, Wisconsin 54409, USA
Internet: www.tsipower.com

Hours of operation are from 8AM to 5PM (Central Standard Time), Monday through Friday
TSI Power will try to reply to E-mail requests for technical support within 24 hours.

REVISIONS		
Rev.	DATE	REASON FOR REVISION
0	March, 2018	Initial release
1	April, 2018	Added upstream circuit breaker information, page 4.
2	September, 2019	Removed remote enable function section, page 2.
3	April, 2021	New TSI logo and font. Removed Fax information.