

Operation of S&C Test Accessory Catalog Number TA-2669

This publication contains instructions for operation of the S&C Test Accessory catalog number TA-2669 in conjunction with S&C Micro-AT Source-Transfer Controls.

For instructions for operation of this device in conjunction with S&C Type AT-2, AT-3, or AT-12 Source-Transfer Controls, refer to S&C Instruction Sheet 514-605.

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Introduction

Qualified Persons

WARNING

Only qualified persons who are knowledgeable in the installation, operation, and maintenance of overhead and underground electric distribution equipment, along with all associated hazards, may install, operate, and maintain the equipment covered by this publication. A qualified person is someone who is trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed
- The proper use of special precautionary techniques, personal protective equipment, insulated and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment

These instructions are intended **ONLY** for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

NOTICE

Thoroughly and carefully read this instruction sheet and all materials included in the product's instruction handbook before installing or operating a Micro-AT Source-Transfer Control. Familiarize yourself with the Safety Information and Safety Precautions on pages 3 and 4. The latest version of this publication is available online in PDF format at sandc.com/en/support/product-literature/.

Retain this Instruction Sheet

This instruction sheet is a permanent part of the Micro-AT Source-Transfer Controls. Designate a location where you can easily retrieve and refer to this publication.

Proper Application

WARNING

The equipment in this publication must be selected for a specific application. The application must be within the ratings furnished for the equipment.

Warranty

The warranty and/or obligations described in S&C's Price Sheet 150, "Standard Conditions of Sale—Immediate Purchasers in the United States" (or Price Sheet 153, "Standard Conditions of Sale—Immediate Purchasers Outside the United States"), plus any special warranty provisions, as set forth in the applicable product-line specification bulletin, are exclusive. The remedies provided in the former for breach of these warranties shall constitute the immediate purchaser's or end user's exclusive remedy and a fulfillment of the seller's entire liability. In no event shall the seller's liability to the immediate purchaser or end user exceed the price of the specific product that gives rise to the immediate purchaser's or end user's claim. All other warranties, whether express or implied or arising by operation of law, course of dealing, usage of trade or otherwise, are excluded. The only warranties are those stated in Price Sheet 150 (or Price Sheet 153), and **THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY EXPRESS WARRANTY OR OTHER OBLIGATION PROVIDED IN PRICE SHEET 150 (OR PRICE SHEET 153) IS GRANTED ONLY TO THE IMMEDIATE PURCHASER AND END USER, AS DEFINED THEREIN. OTHER THAN AN END USER, NO REMOTE PURCHASER MAY RELY ON ANY AFFIRMATION OF FACT OR PROMISE THAT RELATES TO THE GOODS DESCRIBED HEREIN, ANY DESCRIPTION THAT RELATES TO THE GOODS, OR ANY REMEDIAL PROMISE INCLUDED IN PRICE SHEET 150 (OR PRICE SHEET 153).**

Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels and tags attached to the Micro-AT Source-Transfer Controls. Familiarize yourself with these types of messages and the importance of these various signal words:

⚠ DANGER
“DANGER” identifies the most serious and immediate hazards that will likely result in serious personal injury or death if instructions, including recommended precautions, are not followed.
⚠ WARNING
“WARNING” identifies hazards or unsafe practices that can result in serious personal injury or death if instructions, including recommended precautions, are not followed.
⚠ CAUTION
“CAUTION” identifies hazards or unsafe practices that can result in minor personal injury if instructions, including recommended precautions, are not followed.
NOTICE
“NOTICE” identifies important procedures or requirements that can result in product or property damage if instructions are not followed.

Following Safety Instructions

If you do not understand any portion of this instruction sheet and need assistance, contact your nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C’s website sandc.com, or call the S&C Global Support and Monitoring Center at 1-888-762-1100.

NOTICE	
Read this instruction sheet thoroughly and carefully before installing Micro-AT Source-Transfer Controls.	

Replacement Instructions and Labels

If additional copies of this instruction sheet are needed, contact your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

DANGER



The Micro-AT Source-Transfer Control operates high-voltage equipment. Failure to observe the precautions below will result in serious personal injury or death.

Some of these precautions may differ from your company's operating procedures and rules. Where a discrepancy exists, follow your company's operating procedures and rules.

1. **QUALIFIED PERSONS.** Access to a Micro-AT Source-Transfer Control must be restricted only to qualified persons. See "Qualified Persons" on page 2.
2. **SAFETY PROCEDURES.** Always follow safe operating procedures and rules.
3. **PERSONAL PROTECTIVE EQUIPMENT.** Always use suitable protective equipment, such as rubber gloves, rubber mats, hard hats, safety glasses, and flash clothing, in accordance with safe operating procedures and rules.
4. **SAFETY LABELS.** Do not remove or obscure any of the "DANGER," "WARNING," "CAUTION," or "NOTICE" labels.
5. **OPERATING MECHANISM AND BASE.** Do not remove or disassemble operating mechanisms or remove access panels on the Micro-AT Source-Transfer Control unless directed by S&C Electric Company.
6. **ENERGIZED COMPONENTS.** Always consider all parts live until de-energized, tested, and grounded.
7. **MAINTAINING PROPER CLEARANCE.** Always maintain proper clearance from energized components.

This publication provides instructions for the use of S&C Test Accessory catalog number TA-2669. TA-2669 permits preliminary checkout of the source-transfer operation of Micro-AT Source-Transfer Controls in S&C Metal-Enclosed Switchgear and Source-Transfer Pad-Mounted Gear using an external single-phase 120-Vac source. TA-2669 also permits preliminary checkout of the Micro-AT Source-Transfer Controls and motor operator controls in Source-Transfer Vista® Underground Distribution Switchgear, as well as S&C Metal-Enclosed Switchgear and Source-Transfer Pad-Mounted Gear. By performing such a preliminary checkout, full service can be expedited when high voltage is available to the gear. Refer to S&C Instruction Sheet 515-500 for instructions on field programming and operation of the Micro-AT Source-Transfer Control.

In addition, the S&C Test Accessory is required in metal-enclosed switchgear applications and Vista Underground Distribution Switchgear applications in which the Micro-AT Source-Transfer Control is furnished with the optional **Test Panel** feature (catalog number suffix “-Y5”), if the source-transfer control is to be tested with the switchgear de-energized. In these applications, the test accessory provides control power for the switch operators during testing. Refer to S&C Instruction Sheet 515-505 for instructions on the use of the **Test Panel** feature.

The S&C Test Accessory consists of a module with an integral connecting plug for attachment to the source-transfer control input receptacle, a terminal board for connection of the 120-Vac source, and an internal fuse for protection of the source-transfer control input circuits. See Figure 1 on page 6.

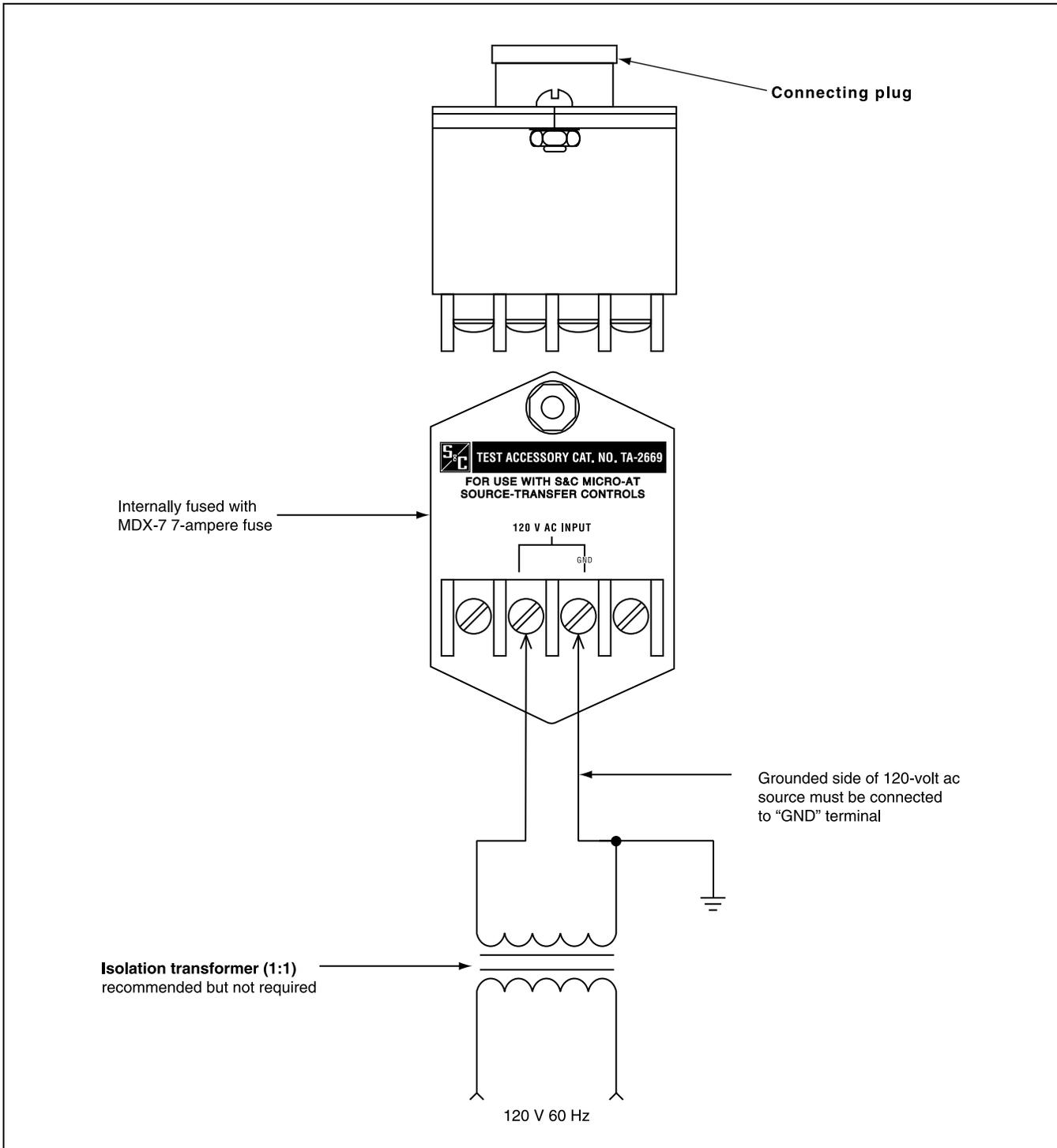


Figure 1. Test accessory connection diagram.

Follow these steps to test the S&C Test Accessory in metal-enclosed switchgear:

- STEP 1.** Ground the switchgear enclosure if it has not yet been permanently grounded. Then, install a jumper from the “GND” terminal on the test accessory to the enclosure.
- STEP 2.** Place the MANUAL/AUTOMATIC operation selector switch in **Manual** mode.
- STEP 3.** Remove the input plug from the input receptacle and immediately transfer it to the shorting receptacle. Refer to the instruction sheet furnished with the switchgear.

NOTICE

Failure to immediately place the input plug on the shorting receptacle may result in damage to the voltage sensors and voltage limiters that will render the automatic-transfer scheme inoperative.

Note: This procedure short-circuits and isolates the secondaries of the voltage sensors, if furnished, and isolates the voltage transformers.

- STEP 4.** Plug the test accessory into the input receptacle.
- STEP 5.** *If the metal-enclosed switchgear is furnished with optional overcurrent lockout feature and the S&C Current Sensors have not been installed on the high-voltage entrance conductors:* Locate, in each entrance bay the four leads (typically taped to the left-hand side wall of the bay) that are to be subsequently attached to the output terminals of the S&C Current Sensors. Connect these leads to the ground bus. This prevents induction voltage from the control source, which could inadvertently activate the overcurrent-lockout circuit.
- STEP 6.** Make up the 120-Vac test-circuit connections shown in Figure 1 on page 6. The grounded side of the voltage source must be connected to the test accessory terminal marked “GND.” Otherwise, secondary fuses for components such as switch operators will be in the grounded instead of the ungrounded side of the 120-Vac source.
- STEP 7.** *For metal-enclosed switchgear furnished with three-phase voltage sensing:*
- Turn off the **Unbalance Detect** setting and set voltage sensing to “2-WIRE.”
 - Press the CONFIGURE button.
 - Press the NEXT button (or the LAST button) repeatedly until “Unbalance Detect” is displayed. Then press the CHANGE button.

- Press each digit of the access code number, then press the ENTER button.
- Press the ← or → button to change the response to “Off.” Then press the ENTER button.
- Press the NEXT button (or the LAST button) repeatedly until voltage sensing is displayed for 2 WIRE. If the displayed setting shows other than the 2 WIRE setting, press the CHANGE button and repeat Steps 6(c) through 6(e).
- Press the ENTER button.

STEP 8. Refer to S&C Instruction Sheet 515-500 for instructions on field programming and operation of the Micro-AT Source-Transfer Control, and proceed with the field adjustment and programming and operational testing as discussed in that document.

STEP 9. *For metal-enclosed switchgear furnished with three-phase voltage sensing:*

- Turn on the **Unbalance Detect** setting and set voltage sensing to “4 WIRE.”
- Press the CONFIGURE button.
- Press the NEXT button (or the LAST button) repeatedly until “Unbalance Detect” is displayed. Then press the CHANGE button.
- Press each digit of the access code number, then press the ENTER button.
- (Press the ← or → button to change the response to “On.” Then press the ENTER button.
- Press the NEXT button (or the LAST button) repeatedly until voltage sensing is displayed for 4 WIRE. If the displayed setting shows other than the 4 WIRE setting, press the CHANGE button and repeat Steps 8(c) through 8(e).
- Press the ENTER button.

STEP 10. When testing is completed, de-energize the external 120-Vac source and remove the connections from the terminal strip of the test accessory.

- Unplug the test accessory from the input receptacle of the source-transfer control.
- Remove the input plug from the shorting receptacle and transfer it to the input receptacle. If the leads for the S&C Current Sensors were connected to the ground bus of each entrance bay in Step 4, disconnect them from the ground bus.

Pad-Mounted Gear Application

Follow these steps to test the S&C Test Accessory in pad-mounted gear:

- STEP 1.** Ground the switchgear enclosure if it has not yet been permanently grounded. Then install a jumper from the “GND” terminal on the test accessory to the enclosure.
- STEP 2.** Place the MANUAL/AUTOMATIC operation selector switch in **Manual** mode.
- STEP 3.** Remove the bolted cover labeled “Input Plug and Voltage Limiters” to gain access to the input plug and shorting receptacle. Refer to the instruction sheet furnished with the pad-mounted gear.
- STEP 4.** Remove the input plug from the input receptacle and immediately transfer it to the shorting receptacle.

NOTICE

Failure to immediately place the input plug on the shorting receptacle may result in damage to the voltage sensors and voltage limiters that will render the automatic-transfer scheme inoperative.

Note: This procedure short-circuits and isolates the secondaries of the voltage sensors and also isolates the current sensors utilized with the optional overcurrent lockout feature, if furnished.

- STEP 5.** Plug the test accessory into the input receptacle.
- STEP 6.** Make up the 120-Vac test-circuit connections shown in Figure 1 on page 6. The grounded side of the voltage source must be connected to the test accessory terminal marked “GND.” Otherwise, the source-transfer control will not function.
- STEP 7.** Turn off the **Unbalance Detect** setting and set voltage sensing to “2 WIRE”.
- Press the CONFIGURE button.
 - Press the NEXT button (or the LAST button) repeatedly until “Unbalance Detect” is displayed. Then press the CHANGE button.
 - Press each digit of the access code number, then press the ENTER button.
 - Press the ← or → button to change the response to “Off.” Then press the ENTER button.
 - Press the NEXT button (or the LAST button) repeatedly until voltage sensing is displayed for 2 WIRE. If the displayed setting shows other than the **2 WIRE** setting, press the CHANGE button and repeat Steps 6(c) through 6(e).
 - Press the ENTER button.

- STEP 8.** Refer to S&C Instruction Sheet 515-500 for instructions on field programming and operation of the Micro-AT Source-Transfer Control, and proceed with the field adjustment and programming and operational testing as discussed therein.

Bear in mind that when the test accessory is used, the control power available will be less than that available during normal three-phase operation. As a result, the time required for the motors to charge the stored-energy operators will be greater than normal and, further, it may take as long as two minutes after the stored-energy operators are charged for the solenoid-tripping capacitors to become fully charged. Therefore, wait at least two minutes after the stored-energy operators are charged before initiating a transfer operation.

- STEP 9.** Turn on the **Unbalance Detect** setting and set voltage sensing to “4 WIRE.”
- Press the CONFIGURE button.
 - Press the NEXT button (or the LAST button) repeatedly until “Unbalance Detect” is displayed. Then press the CHANGE button.
 - Press each digit of the access code number, then press the ENTER button.
 - Press the ← or → button to change the response to “On.” Then, press the ENTER button.
 - Press the NEXT button (or the LAST button) repeatedly until voltage sensing is displayed for 4 WIRE. If the displayed setting shows other than the **4 WIRE** setting, press the CHANGE button and repeat Steps 8(c) through 8(e).
 - Press the ENTER button.
- STEP 10.** When testing is completed, de-energize the external 120-Vac source and remove the connections from the terminal strip of the test accessory.
- Unplug the test accessory from the input receptacle of the source-transfer control.
 - Remove the input plug from the shorting receptacle and transfer it to the input receptacle.

Follow these steps to test the S&C Test Accessory in Vista switchgear:

- STEP 1.** Ground the low-voltage enclosure if it has not yet been permanently grounded. Then, install a jumper from the “GND” terminal on the test accessory to the enclosure.
- STEP 2.** Place the MANUAL/AUTOMATIC operation selector on the Micro-AT control to **Manual** mode.
- STEP 3.** Remove the input plug from the input receptacle (located just to the lower left of the control rack).
- STEP 4.** Plug the test accessory into the input receptacle.
- STEP 5.** Make the 120-Vac test-circuit connections shown in Figure 1 on page 6. If an isolation transformer is used, it must be rated for at least 1 kVA to provide adequate power for operation. The grounded side of the voltage source must be connected to the test accessory terminal marked “GND.” Otherwise, the source-transfer control will not function. Then, energize the 120-Vac source.
- STEP 6.** Turn off the **Unbalance Detect** setting and set voltage sensing to “2 WIRE.”
- Press the CONFIGURE button.
 - Press the NEXT button (or the LAST button) repeatedly until “Unbalance Detect” is displayed. Then press the CHANGE button.
 - Press each digit of the access code number, then press the ENTER button.
 - Press the ← or → button to change the response to “OFF.” Then press the ENTER button.
 - Press the NEXT button (or the LAST button) repeatedly until voltage sensing is displayed for 2 WIRE. If the displayed setting shows other than the **2 WIRE** setting, press the CHANGE button and repeat Steps 6(c) through (e).
 - Press the ENTER button.
- STEP 7.** Refer to S&C Instruction Sheet 515-500 for instructions on the field programming and operation of the Micro-AT Source-Transfer Control, and proceed with the field adjustment and programming and operational testing as discussed therein.
- Refer to S&C Instruction Sheet 683-510 for instructions on testing the motor operators and controls.
- Bear in mind that when the test accessory is used, the control power available will be less than that available during normal three-phase operation. As a result, the time required for a motor operation may be greater than normal.
- STEP 8.** Turn on the **Unbalance Detect** setting and set voltage sensing to “4 WIRE.”
- Press the CONFIGURE button.
 - Press the NEXT button (or the LAST button) repeatedly until “Unbalance Detect” is displayed. Then press the CHANGE button.
 - Press each digit of the access code number, then press the ENTER button.
 - Press the ← or → button to change the response to “On.” Then press the ENTER button.
 - Press the NEXT button (or the LAST button) repeatedly until voltage sensing is displayed for 4 WIRE. If the displayed setting shows other than the **4 WIRE** setting, press the CHANGE button and repeat Steps 8(c) through 8(e).
 - Press the ENTER button.
- STEP 9.** When testing is completed, de-energize the external 120-Vac source and remove the connections from the terminal strip of the test accessory.
- Unplug the test accessory from the input receptacle of the source-transfer control.
 - Return the input plug to the input receptacle.