

Specifications

Conditions of Sale

STANDARD: The seller's standard conditions of sale set forth in Price Sheet 150 apply.

SPECIAL TO THIS PRODUCT:

APPLICATION NOTE: The Micro-AT Source-Transfer Control in Weatherproof Enclosure is designed for use in conjunction with pole-mounted or steel-structure mounted Alduti-Rupter® Switches power-operated by S&C Type AS-1A Switch Operators (for rotating operating mechanisms) or Type AS-10 Switch Operators (for reciprocating operating mechanisms) equipped for this application. This arrangement provides automatic source transfer for grounded primary-selective overhead distribution systems rated 7.2 kV through 46 kV.

When so applied, the Micro-AT Source-Transfer Control assures a high degree of critical-load continuity by minimizing interruptions resulting from the loss of one source. Excluding the intentional time delay to coordinate with upstream protective devices and/or transition dwell time●, transfer is achieved in 1.5 seconds maximum (when Type AS-1A Switch Operators are used) or 2.4 seconds maximum (when Type AS-10 Switch Operators are used).

The Micro-AT Source-Transfer Control uses an advanced electronic microprocessor to perform control operations, as directed by settings programmed into the device at the factory and in the field. Such settings—consisting of the control's operating characteristics and voltage-, current-, and time-related operating parameters—are entered into the control by means of a keypad on the front panel.

Voltage Sensing

The voltage-sensing input circuitry of the Micro-AT Source-Transfer Control in Weatherproof Enclosure accommodates either of the following single-phase or three-phase voltage-sensing schemes, using user-furnished voltage transformers having 240/120-Volt, 60-Hertz secondaries:

- For single-phase sensing, one line-to-ground or line-to-line connected voltage transformer per source
- For three-phase sensing, three line-to-ground connected voltage transformers per source, or—on delta-connected systems only—two line-to-line connected voltage transformers per source

● This is an adjustable time delay to allow motor residual voltage—the voltage appearing at the terminals of a connected motor when the source is interrupted—to drop sufficiently before service is restored.

Unbalance Detection

An **Unbalance Detection** feature may be field-programmed in the Micro-AT Source-Transfer Control in instances where three-phase voltage sensing is furnished. This feature protects the loads from any source-side **Open Phase** condition at the same system voltage level as the Alduti-Rupter Switches—whether caused by utility-line burndown, broken conductors, single-phase switching, equipment malfunctions, or single-phasing resulting from blown source-side fuses. The **Unbalance Detection** feature continuously develops and monitors the negative-sequence voltage to detect any unbalance present as the result of an **Open Phase** condition.■

If the voltage unbalance exceeds a preset reference level for a period of time sufficient to confirm the loss is not transient, an output signal is produced that initiates automatic transfer to the other source. By monitoring negative-sequence voltage, the **Unbalance Detection** feature detects virtually all source-side **Open Phase** conditions, even those where backfeed defeats simple voltage-magnitude sensing schemes.

INCLUSIONS: The Micro-AT Source-Transfer Control in Weatherproof Enclosure includes the following standard features:

- A MANUAL/AUTOMATIC operation selector switch
- A two-line, 48-character backlit liquid-crystal display
- An automatic-transfer READY indicating lamp, SOURCE VOLTAGE indicating lamps, and an OVER-CURRENT LOCKOUT indicating lamp with a reset key
- A keypad for entry of the control's operating characteristics and voltage-, current-, and time-related operating parameters
- Test keys for simulating overcurrent and loss of voltage on the sources
- Input isolation transformers and a signal-voltage input isolation assembly to isolate the source-transfer control from potential ground loops that may occur because of differences in voltage between the grounding points of the voltage transformers and the control
- A control-voltage seeking relay that transfers between the two sources, as required, to ensure adequate control voltage for the switch operators

■ The **Unbalance Detection** feature should not be programmed in applications using three-phase voltage sensing provided by two line-to-line connected voltage transformers per source.



- Terminal strips for external connections (All necessary internal connections are prewired.)
- Fuseholders for secondary fuses of user-furnished voltage transformers
- An unpainted 304L stainless steel padlockable enclosure for steel structure mounting

EXCLUSIONS: The Micro-AT Source-Transfer Control in Weatherproof Enclosure does not include voltage transformers or Fisher Pierce Series 1301 Powerflex® Line Post Current Sensors (as are required for the optional **Overcurrent Lockout** feature discussed in the “Specification Deviations” section below).

SPECIFICATION DEVIATIONS: Refer to Table 2 on page 4.

Overcurrent Lockout

An **Overcurrent Lockout** feature may be optionally furnished in the Micro-AT Source-Transfer Control in Weatherproof Enclosure. This feature prevents an **Automatic Transfer** operation that would close a source interrupter switch into a fault, thereby avoiding further utility-system disturbance. The **Overcurrent Lockout** feature requires three user-furnished Fisher Pierce Series 1301 Powerflex Line Post Current Sensors for each source.

An overcurrent in excess of a preset level will set up the **Overcurrent Lockout** feature. If the overcurrent is caused by a fault cleared by a source-side protective device, the prolonged loss of voltage will cause the associated source interrupter switch to open. At the same time, an **Overcurrent Lockout** mode will be set up in the source-transfer control so the other source interrupter switch will not automatically close into the fault. (If the overcurrent is caused by a fault cleared by a load-side protective device, however, there will be no prolonged loss of voltage and hence the source-transfer control will not initiate any switching operations.) The **Overcurrent Lockout** mode may be externally reset; a terminal block is included in the weatherproof enclosure for attachment of user-furnished control wiring providing the appropriate reset signal.

The lockout level of the source-transfer control is factory-set at 480 amperes, but it may be field-adjusted to any value between 200 and 1500 amperes●; the setting chosen should take into account the emergency peak-load current of the system to preclude nuisance lockouts.

● S&C recommends customers use the factory-default setting or adjust this value to 70% of the available neutral current, whichever is lower.

Remote Indication

A **Remote Indication** feature may also be optionally furnished in the Micro-AT Source-Transfer Control in Weatherproof Enclosure. This feature permits remote monitoring of presence or absence of source voltages, **Manual** or **Automatic** operating mode, status of the READY indicator, EVENT indicator, and (if furnished) overcurrent lockout. A terminal block is included in the weatherproof enclosure for attachment of user-furnished control wiring to remote indicators.

Test Panel

A **Test Panel** feature may also be optionally furnished. This feature permits the use of an external, adjustable three-phase source to verify, through independent measurement, the response of the control to **Loss of Source, Phase Unbalance, and Overcurrent Lockout** conditions.

Supervisory Control

A **Supervisory Control** feature may also be optionally furnished. This feature permits switch operation from a remote location. A terminal block is included in the weatherproof enclosure for attachment of user-furnished control wiring providing the appropriate supervisory control signals.

Communications Card

A **Communications Card** feature may be optionally furnished as well. This feature is used in conjunction with a user-furnished personal computer for local uploading of the Micro-AT Source-Transfer Control’s “events,” operating characteristics and operating parameters, digital input and output states, and messages explaining why the automatic-transfer READY indicating lamp isn’t lit. This feature also allows local downloading of the user’s standard operating parameters to the Micro-AT control.

For existing Micro-AT control users with Windows® 95, 98, 2000, NT, XP, or Windows 7 32-bit operating systems, a Micro-AT communication cable is necessary for connecting the communications card to the personal computer. Refer to the “Accessories” table on page 4. Included with the communication cable is the Matlink communication software.

For new Micro-AT control users with Windows 7 or 10 64-bit operating system platforms, see the “Wi-Fi Adapter Kit” section on page 3.

Wi-Fi Adapter Kit

For users with Windows 7 or 10 64-bit operating system platforms, a Micro-AT Wi-Fi adapter kit in tandem with the HMI application software (in lieu of the Matlink communication software) can be used to locally connect to the Micro-AT control. Refer to the Table 3 on page 4.

SPECIAL WARRANTY PROVISIONS: The standard warranty contained in the seller’s standard conditions of sale, as set forth in Price Sheet 150, applies to Micro-AT Source-Transfer Controls, except the first and second paragraphs of the said warranty are replaced by the following:

(1) General: The seller warrants to the immediate purchaser or end user for a period of 10 years from the date of shipment that the equipment delivered will be of the kind and quality specified in the contract description and will be free of defects of workmanship and material. Should any failure to conform to this warranty appear under proper and normal use within 10 years after the date of shipment, the seller agrees, upon prompt notification thereof and confirmation the equipment has been stored, installed, operated, and maintained in accordance with recommendations of the seller and standard industry practice, to correct the nonconformity either by repairing any damaged or defective parts of the equipment or (at the seller’s option) by shipment of necessary replacement parts. The seller’s warranty does not apply to any equipment that has been disassembled, repaired, or altered by anyone other than the seller. This limited warranty is granted only to the immediate purchaser or, if the equipment is purchased by a third party for installation in third-party equipment, the end user of the equipment. The seller’s duty to perform under any warranty may be delayed, at the seller’s sole option, until the seller has been paid in full for all goods purchased by the immediate purchaser. No such delay shall extend the warranty period.

The seller further warrants to the immediate purchaser or end user that for a period of two years from the date of shipment the software will perform substantially in accordance with the then-current release of specifications if properly used in accordance with the procedures described in the seller’s instructions. The seller’s liability regarding

any of the software is expressly limited to exercising its reasonable efforts in supplying or replacing any media found to be physically defective or in correcting defects in the software during the warranty period. The seller does not warrant the use of the software will be uninterrupted or error-free.

WARRANTY QUALIFICATIONS: Warranty of Micro-AT Source-Transfer Controls is contingent upon the installation, configuration, and use of the control or software in accordance with S&C’s applicable instruction sheets. This warranty does not apply to major components not of S&C manufacture, such as batteries, communication devices, and remote terminal units. However, S&C will assign to the immediate purchaser or end user all manufacturers’ warranties that apply to such major components.

How to Order

Complete these steps to identify the base catalog number, the appropriate options, and the product accessories needed for a complete order:

STEP 1. Select the catalog number of the source-transfer control from Table 1 on page 4.

Catalog Number:

STEP 2. Add suffix(es) for any optional feature(s) from Table 2 on page 4.

Suffix: —

STEP 3. Add any accessories desired from Table 3 on page 4 as separate line items to the order.

Catalog Number(s): —
 —

Example: For a Micro-AT Source-Transfer Control in a weatherproof enclosure equipped with an optional **Overcurrent Lockout** feature and a pole mounting bracket with hardware, the completed catalog number would be:

—

Note: Refer to S&C Specification Bulletin 769-31 for ordering information on Type AS-1A and Type AS-10 Switch Operators for use with a Micro-AT Source-Transfer Control in a weatherproof enclosure. The switch operator must be furnished with optional source-transfer control compatibility, catalog number suffix “-U1.”

Micro-AT® Source-Transfer Control

Table 1. Micro-AT Source-Transfer Control—in Weatherproof Enclosure^①

Diagram	Catalog Number ^②
	39060

^① For use only with Type AS-1A and Type AS-10 Switch Operators using 115-Volt 60-Hertz or 230-Volt 60-Hertz motor and control voltage, and furnished with optional source-transfer control compatibility, catalog number suffix “-U1.” See S&C Specification Bulletin 769-31.

^② For steel structure mounting. For pole mounting, specify optional pole mounting bracket. See Table 2.

Table 2. Optional Features

Item	Suffix to be Added to Source-Transfer Control Catalog Number
Overcurrent lockout—For Use with Fisher Pierce Series 1301 Powerflex Line Post Current Sensors. Prevents an automatic-transfer operation that would close a switch into a fault. Includes facilities for external reset ^①	-Y21
Remote indication. Includes provisions for remote monitoring of presence or absence of source voltages, Manual or Automatic operating mode, status of the Ready indicator, Event indicator, and (if furnished) overcurrent lockout	-Y4
Test panel. Permits the use of an external, adjustable three-phase source to verify, through independent measurement, the response of the control to Loss of Source , Phase Unbalance , and Overcurrent Lockout conditions	-Y5
Supervisory control. Includes facilities for switch operation from a remote location	-Y6
Communications card. Permits local uploading of “events” and settings from the Micro-AT control to a user-furnished personal computer, as well as downloading of the user’s standard operating parameters ^{②③}	-Y8
Pole mounting bracket with hardware	-P1

^① Three user-furnished Fisher Pierce Series 1301 Powerflex Line Post Current Sensors are required for each source. The lockout level of the source-transfer control is factory-set at 480 amperes, but it may be field-adjusted to any value between 200 and 1500 amperes; the setting chosen should take into account the emergency peak-load current of the system to preclude nuisance lockouts.

^② For existing Micro-AT control users with a Windows® 95, 98, 2000, NT, XP, or Windows 7 32-Bit operating system platform. This requires a Micro-AT control communication cable, catalog number TA-2320 or TA-2321. See Table 3.

^③ For new or existing Micro-AT control users with Windows 7 or 10 64-bit operating system platforms, a Micro-AT Wi-Fi adapter kit, catalog number TA-3401, is required. See Table 3.

Table 3. Accessories

Item	Catalog Number	
Micro-AT control communication cable. For connecting optional communications card to user-furnished personal computer. Includes Matlink communication software	For personal computers having 25-pin serial communication port	TA-2320
	For personal computers having 9-pin serial communication port	TA-2321
Wi-Fi adapter kit. Used to locally connect to the Micro-AT control for users with Windows 10 64-bit operating system platforms ^①	TA-3401●	
Micro-AT Communications and SCADA Gateway ^{②③④⑤}	TA-4033	

^① Used in tandem with the HMI application software. To obtain the HMI software application, download the installer from the S&C customer portal.

^② Requires a Micro-AT control with a communications card (-Y8) option to operate.

^③ Requires Micro-AT firmware version 2.6.1 or later.

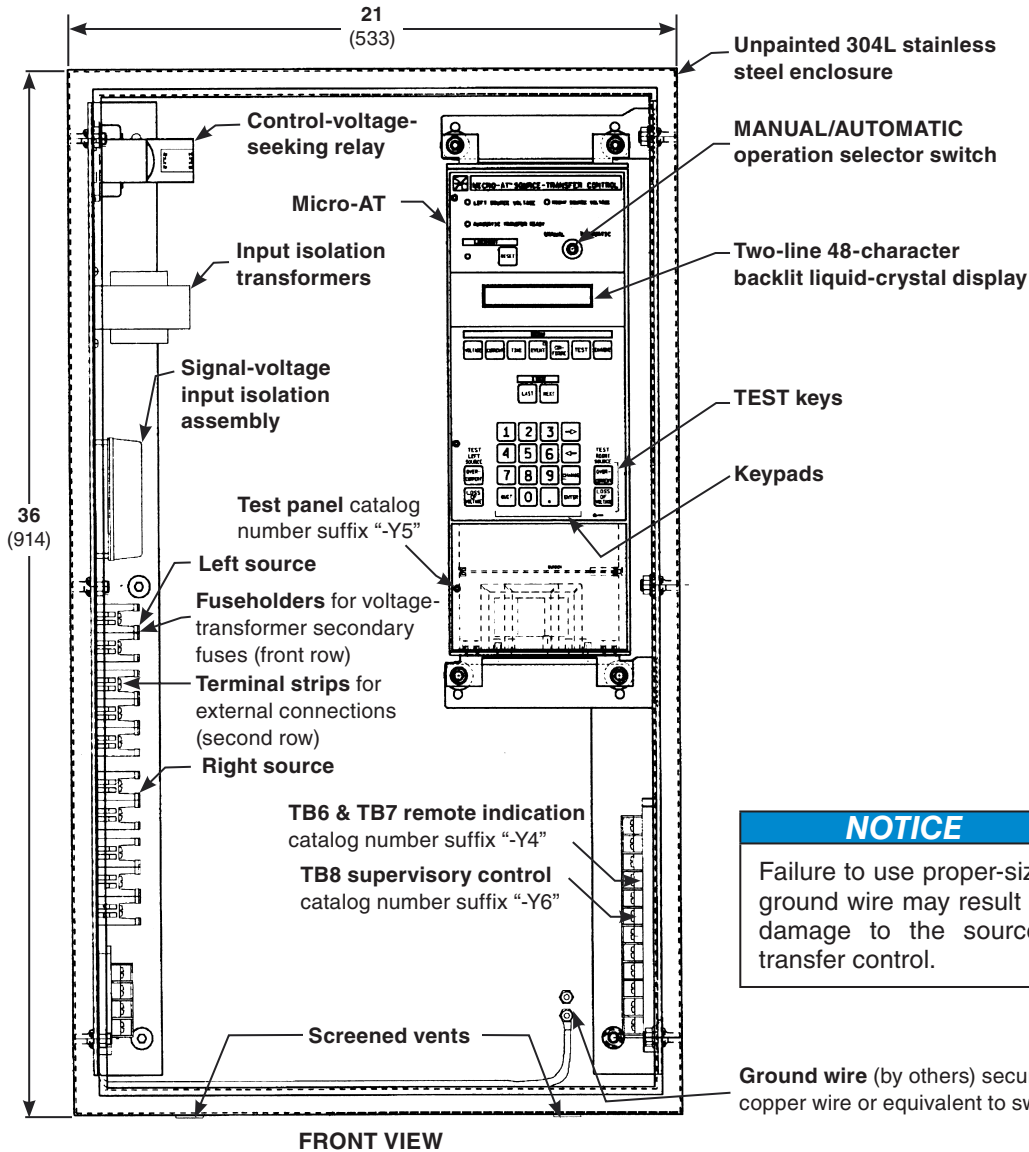
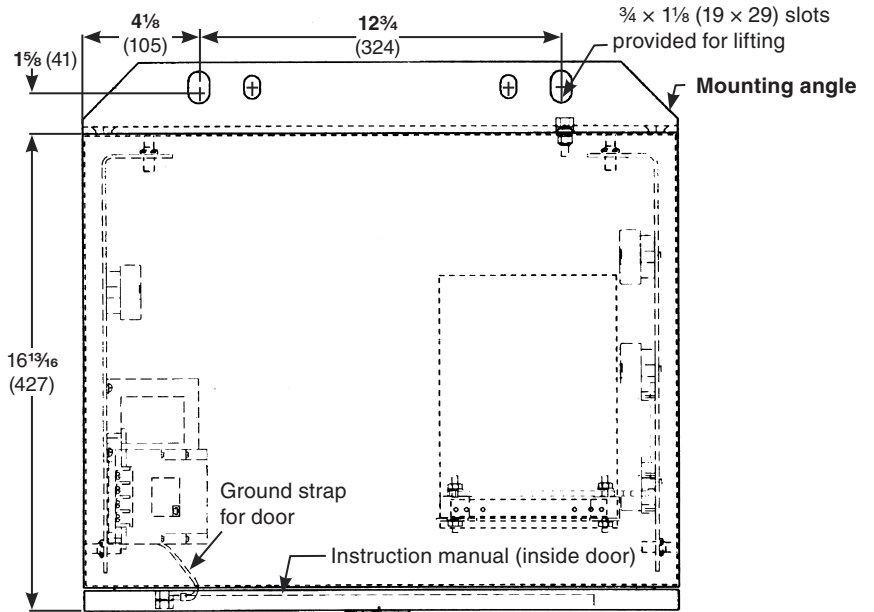
^④ Requires an external power supply.

^⑤ **Supervisory Control** option (-Y6) required for remote control capability.

● If purchasing for an existing Micro-AT control, contact S&C to determine whether additional items are required to make the Micro-AT control components and firmware compatible with the Wi-Fi adapter kit.

Micro-AT® Source-Transfer Control

Dimensions in Inches (mm)

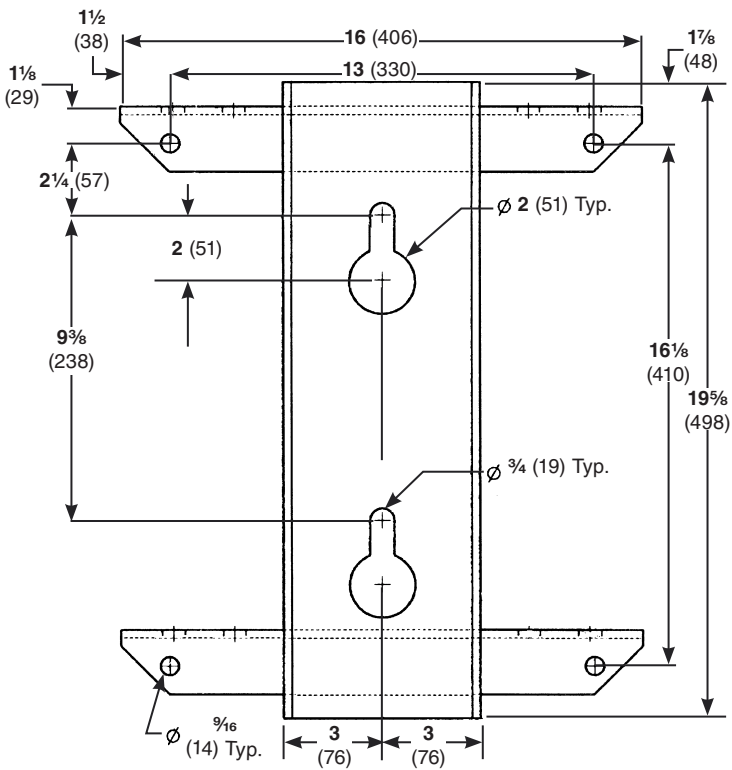


NOTICE

Failure to use proper-size ground wire may result in damage to the source-transfer control.

Ground wire (by others) securely connect one #6 copper wire or equivalent to switch ground wire

Micro-AT® Source-Transfer Control



Dimensions in Inches (mm)

Mounting Bracket for Catalog Number Suffix "-P1"

