We manage heat ®

Model GIT®–3A
Gutter Snow and Ice Melting Control

Part Number 19554

Installation and Operation Manual

WARNING

Hazard of electrical shock.

Follow all safety procedures.

Any installation involving electric heater wiring must be grounded to earth to protect against shock and fire hazard. Suitable ground fault detection and interrupting systems must be in use at all times to reduce shock and fire hazard and to protect equipment.

Electric wiring to heating elements must be installed in accordance with Article 110.3B, Article 210.8(A)(3), Article 250.4(A), Article 426.4 & 28, Article 725.55 and all other applicable sections of the National Electric Code (NFPA 70), local electrical codes, and any third party standards.

Only qualified personnel trained in electrical equipment service should perform maintenance on heating and control equipment.

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Description

The computerized UL and CUL Listed GIT–3A automatically controls gutter and downspout snow and ice melting heaters. It is safety tested to Standard 873 for Temperature Indicating and Regulating Equipment.

The GIT–3A consists of sensor and control assemblies connected by a 12' (3.6 m) cable. The sensor meets the NEC (National Electrical Code) low voltage Class 2 requirement for wet locations.

Supply Voltage Options

The GIT–3A provides jumper-selected supply voltage options of 120, 208 through 240, and 277 volts. Selecting the proper supply voltage is very important. An incorrect setting may destroy the GIT–3A or render it inoperative. The GIT–3A operates from the heater supply voltage.

Relay (Contactor) Contact Ratings

The relay (contactor) provides a Form A (SPST) contact rated for up to 26 amp AC heater loads at voltages at or below 277 volts.

Safety

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Electric wiring to heating elements must be installed in accordance with Article 110.3B, Article 210.8(A)(3), Article 250.4(A), Article 426.4 & 28, Article 725.55 and all other applicable sections of the National Electric Code (NFPA 70), local electrical codes, and any third party standards. Follow the installation instructions contained herein and those provided by the heater manufacturer. If you have questions concerning the installation contact Customer Service for assistance.

Use a GFEP circuit breaker on each branch circuit connected to the snow and ice melting system. Clearly label each circuit breaker with its function. This is vitally important when there is more than one point of disconnect. The GIT–3A often serves as a pilot duty relay for operating high current single or three phase contactors in commercial applications.

Make certain that the heater shield is properly grounded as required by the NEC.

Installing the Sensor

Mount the sensor as low as possible in the gutter about a foot upstream of the downspout. For proper operation, the heating cable must be close to but not touching the sensor. A separation of $^{1}/_{2}$" (1.3 cm) to 1" (2.5 cm) is ideal. Orient the sensor with the temperature sensor facing upstream and the moisture sensor toward the down spout. Use the supplied plastic mounting straps and gasketed #10 fasteners to secure the sensor in the gutter via $^{3}/_{16}$" drilled holes through the gutter. See Figure 1.

Installing the Control

Lethal voltages are present within the control enclosure during operation. Some installations may require two points of disconnect. Tag all circuit breakers off during installation or service.

The GIT–3A comes factory set for 277 volt operation. A jumper located in the control must be changed for 120 or 208 through 240 volt operation. See Figure 2. An incorrect setting may destroy the GIT–3A or render it inoperative.

The control comes connected to the sensor with 12 feet (3.6 meter) of three conductor cable. The snow and ice melting heater leads, supply leads and sensor leads terminate in the control enclosure. Locate the control enclosure outdoors at a place convenient for the wiring connections. Position the control housing so that the sensor cable entry is positioned at the bottom, supply leads enter at the bottom and heater leads exit to the left. Failing to orient the housing correctly may cause moisture collection in the housing resulting in equipment damage.

For line supply and load connections use #10 AWG or larger wires rated for at least 194° F (90° C). Figure 4, 5 and 6 show wiring for typical 120/240 volt residential application, unbalanced 208 or 277 3-phase application and pilot duty application.

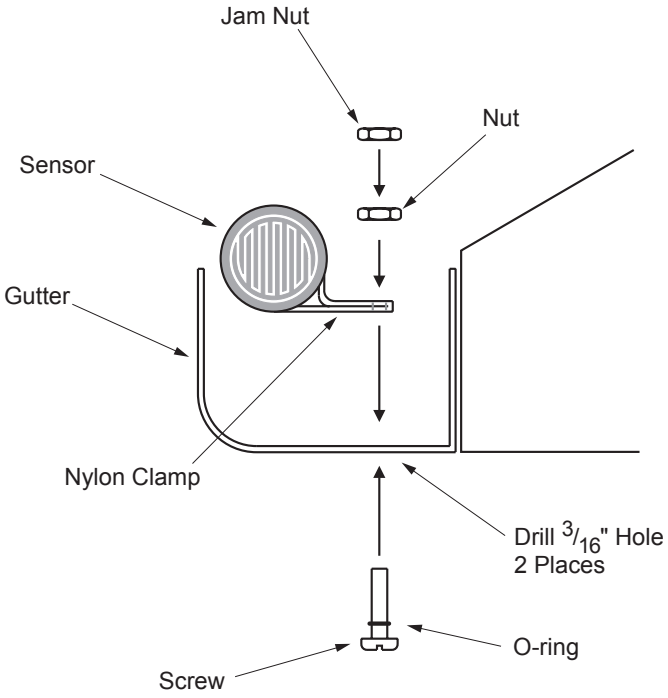

Figure 1. Sensor mounting

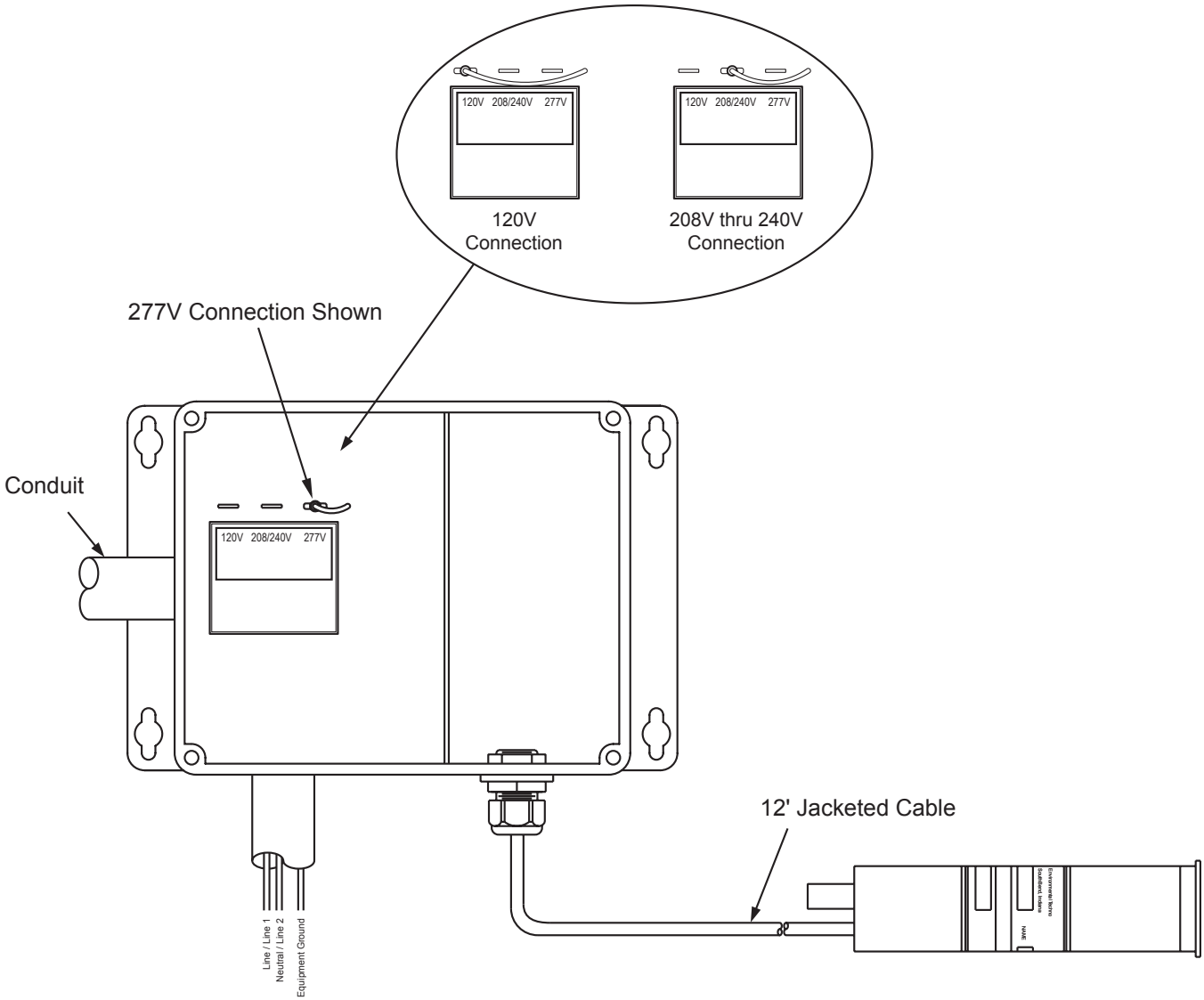

Figure 2. Selecting Voltage

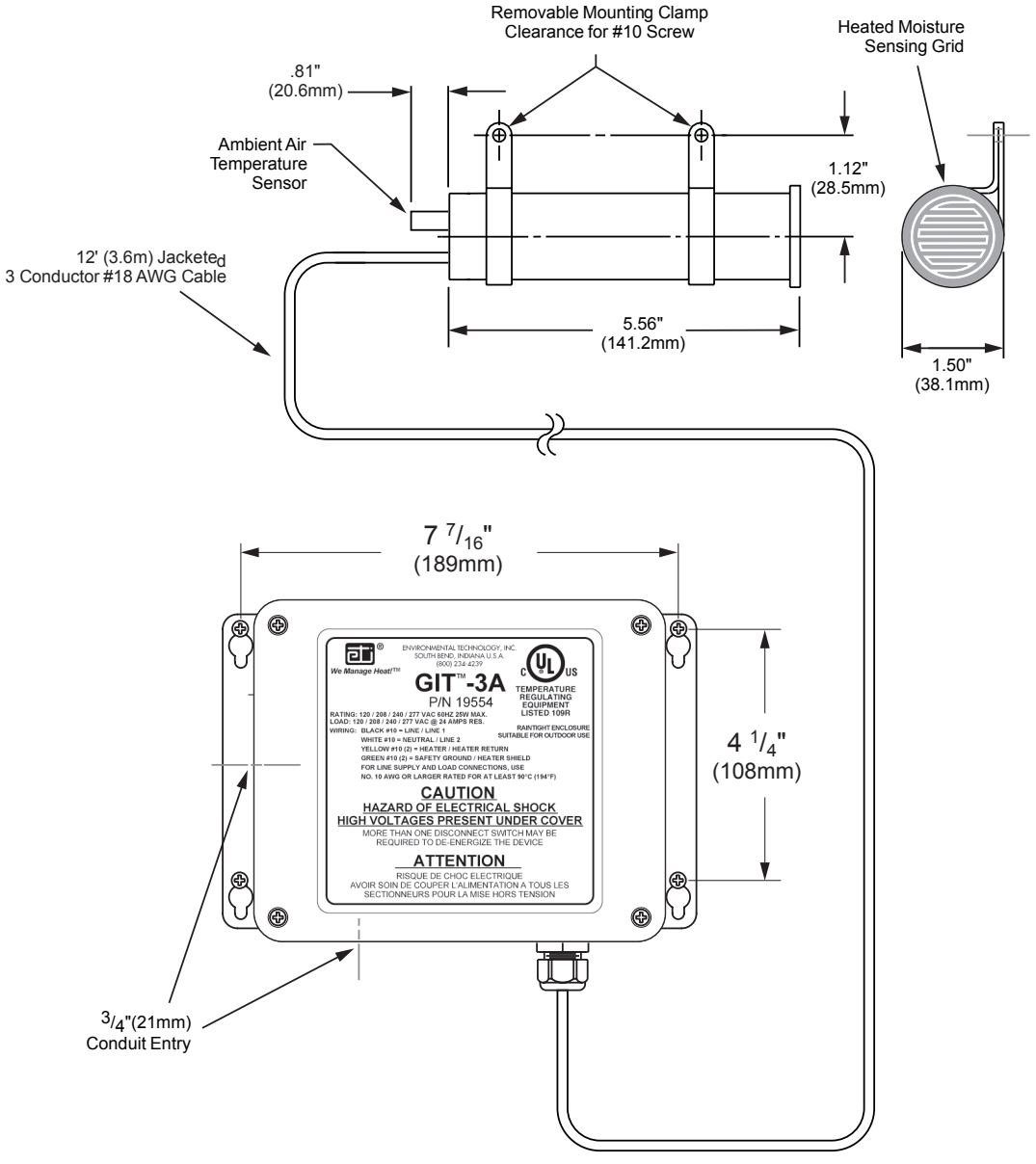

Figure 3. Mounting Dimensions

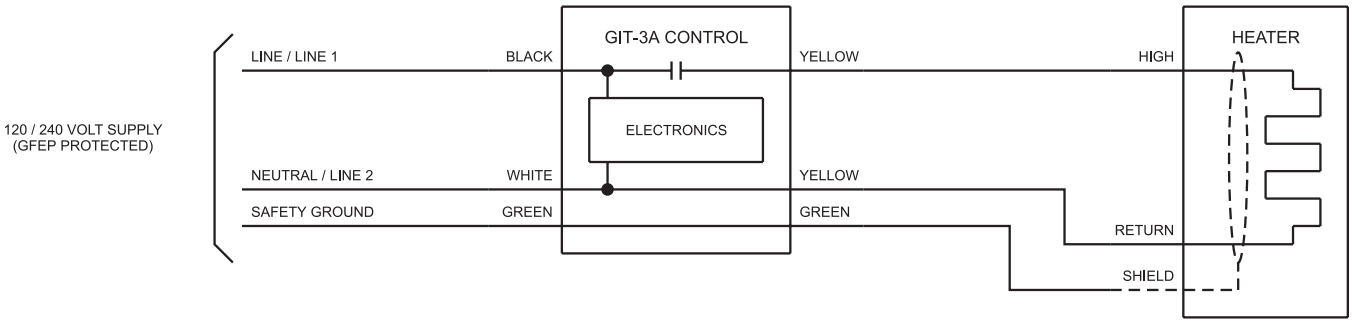

Figure 4. Typical 120/220 Volt Residential Applications

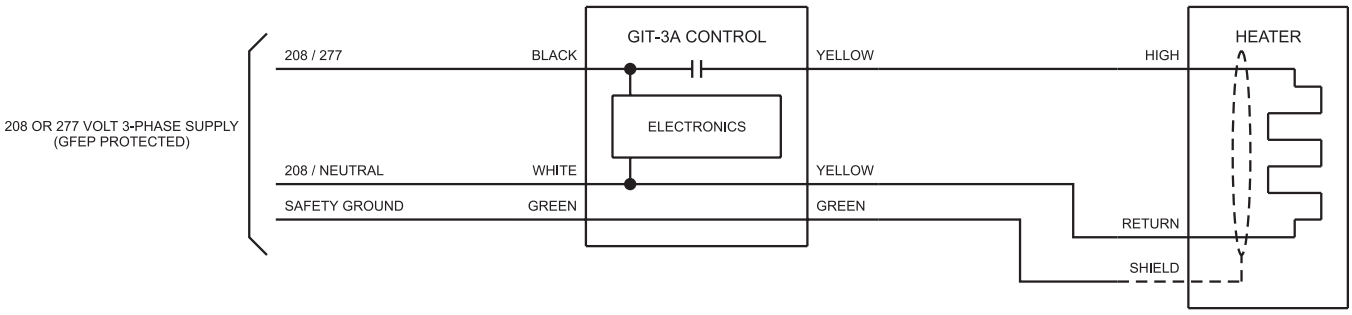

Figure 5. Unbalanced 208 or 277 3-Phase Applications

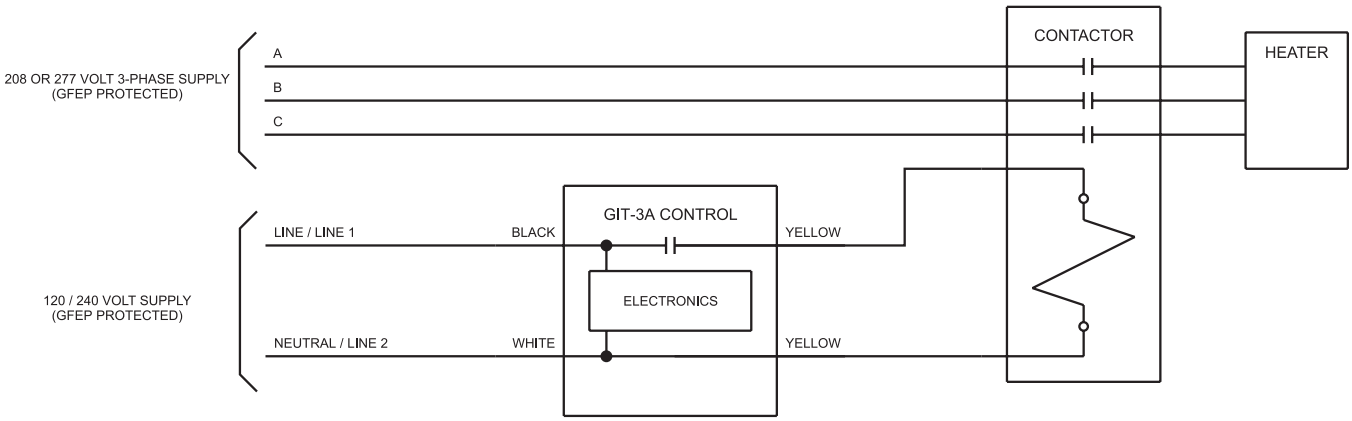

Figure 6. Pilot Duty Applications

Post Installation Tests

Thoroughly check the system before placing it in service. Our experience shows that installation errors cause the majority of problems. Frequently encountered problems include wiring errors and improper waterproofing. Simple electrical tests and visual inspections identify these problems.

Checking the sensor in the field is not practical. Verifying its operation requires special test equipment that is neither portable nor commonly available.

Checking the operation of the control requires a clamp-on AC ammeter. Follow the steps below to verify operation. The gutter and downspout must be dry while doing these tests.

1. Remove power from the snow and ice melting system. There may be two points of disconnect.
2. Clamp the ammeter to one of the yellow leads in the control housing.
3. Locate the probe connections in the low voltage compartment. Remove the wire nuts from the black leads and white leads. Make certain the same color wires remain twisted together and that the two black and two white wires don't touch electrically.
4. Apply power to the snow and ice melting system. This may require two points of connection. Use care. Lethal voltages are now present within the control enclosure. The ammeter should read approximately zero amps.
5. Remove power from the snow and ice melting system. There may be two points of disconnect.
6. Using a wire nut, temporarily connect the two black and two white wires together.
7. Apply power to the snow and ice melting system. This may require two points of connection. Use care. Lethal voltages are now present within the control enclosure. The ammeter should read the nominal heater current.
8. Immediately remove power from the snow and ice melting system. There may be two points of disconnect.
9. Make certain that the two black probe leads are securely connected together electrically. Secure these wires with a wire nut.
10. Make certain that the two white probe leads are securely connected together electrically. Secure these wires with a wire nut.

Operating Instructions

The GIT–3A does not require user intervention during normal operation.

Maintenance

Although the GIT–3A does not require routine maintenance, make certain that the gutters and down spouts are cleaned each fall to ensure efficient gutter and down spout snow and ice melting system efficiency.

For technical help, questions or comments concerning this product or any of Environmental Technology, Inc. products contact the Customer Service Department between 8:00am and 5:00pm at:

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