

MANUAL GE-AIR

(GE-AIR/1, GE-AIR/2, GE-AIR/24)

WIRING DIAGRAM

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INSTALLATION

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Installation / User's Guide

ATTENTION ELECTRICIAN
SEE WIRING DETAILS ON PAGES A-3 AND A-5 FOR GE-AIR/1 AND GE-AIR/2
SEE WIRING DETAILS ON PAGES A-4 AND A-5 FOR GE-AIR/24
ADDITIONAL INFORMATION IN SECTION B

WARNINGS AND PRECAUTIONS

Although the manufacturer has made every effort to ensure the accuracy of the information contained herein, this document is subject to change without notice due to ongoing product development.

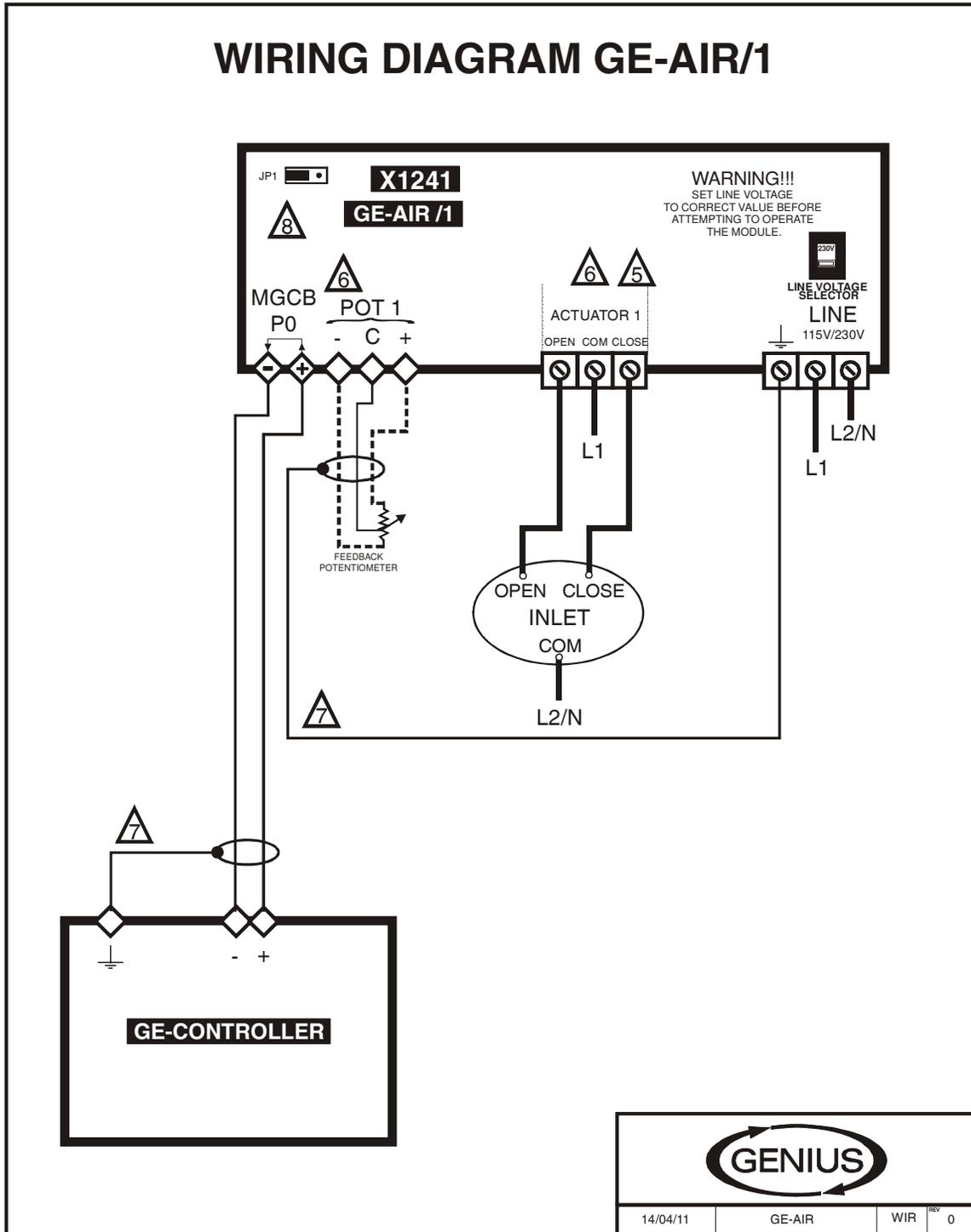
WARNINGS AND PRECAUTIONS

Equipment, probe failure, blown fuses and/or tripped breakers may prove harmful to the contents of the building. Therefore it is strongly recommended to install backup devices and alarm or warning devices. Spare equipment should also be available at the owner's site. Equipment manufactured by the manufacturer is protected against normal line surges. High surges caused by thunder storms or power supply equipment may damage this equipment. For added security against line voltage surges it is recommended that surge and noise suppression devices be installed at the electrical distribution panel. Use of shielded cable for probes is recommended for protection against lightning. These devices are available from most electrical supply distributors.

RECOMMENDATIONS

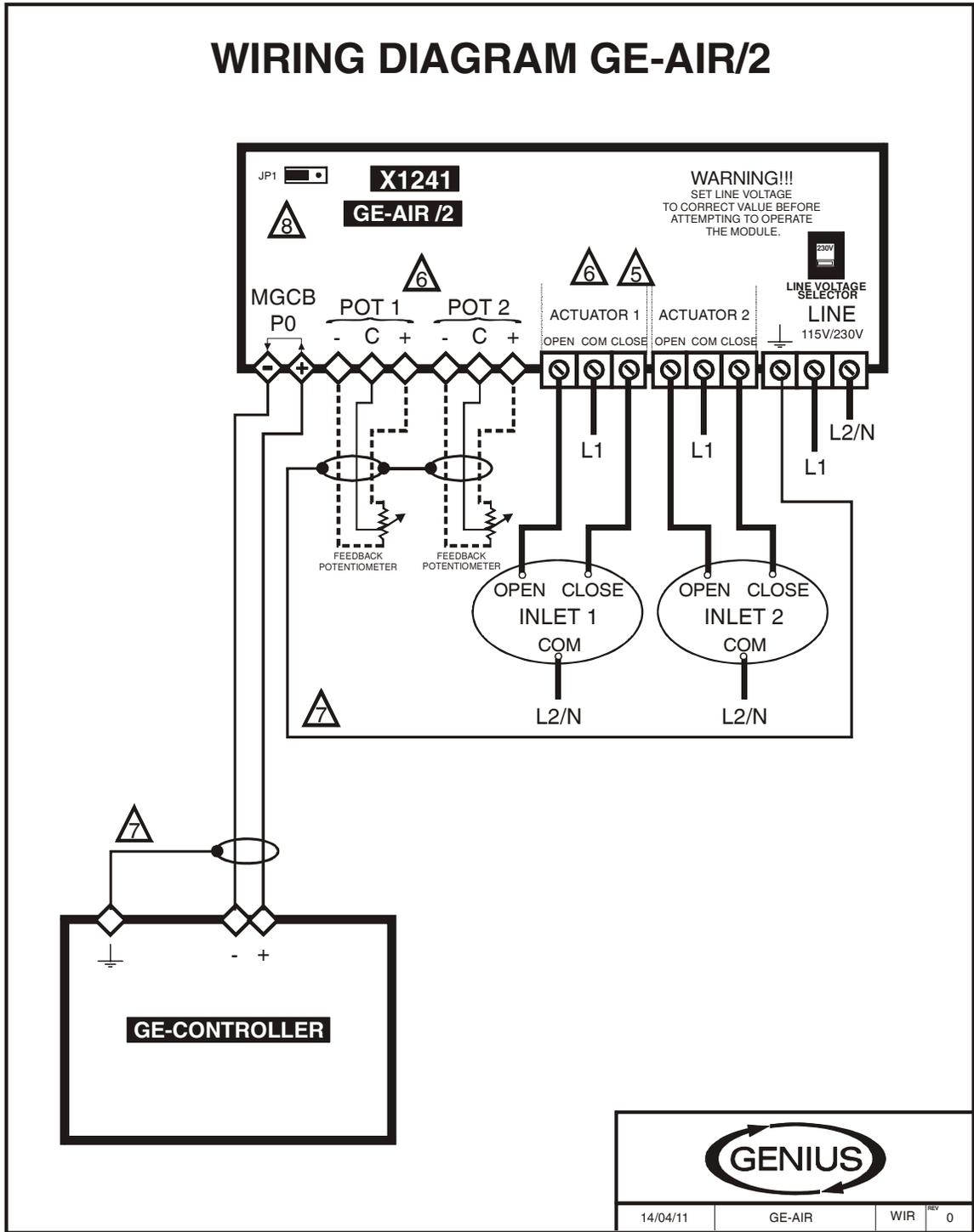
The manufacturer recommends that all installation procedures described herein be performed by a qualified electrician or installation technician. Further more the manufacturer recommends testing all the functions, after installation, after changes to the installation and every month after that.

Fuse verification and replacement, as well as the proper setting of control values shall be the responsibility of the owner of this equipment.

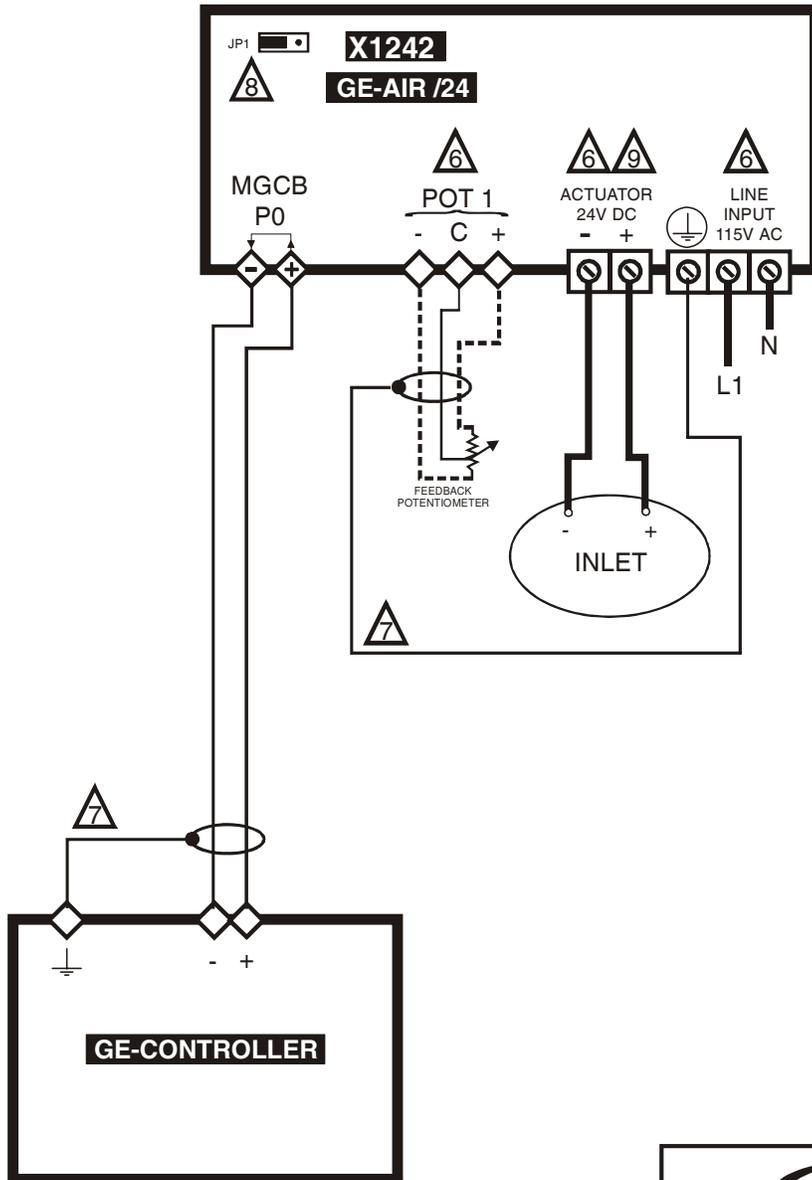


GE-AIR WIRING DIAGRAM

SECTION A



WIRING DIAGRAM GE-AIR/24



14/04/11	GE-AIR	WIR	REV 0

GE-AIR Electrician's notes

- 1  (PROBE WIRING) SHIELDED WIRE AWG #22 WITH 16/30 STRANDING, 500FT/150M MAXIMUM LENGTH. (Ex.: DECA 73-310)
For other probe, refer to specific probe manual for appropriate maximum length and wire size or use AWG #22, 500FT/150M MAXIMUM LENGTH (whichever is shorter).
- 2  (COMMUNICATION WIRING) SHIELDED LOW CAPACITANCE WIRE, (Capacitance between conductors @ 1Khz = 24PF/FT), TWISTED PAIR (8 twist/FT), AWG #22, 750 FT/250 M MAX LENGTH (Ex.: BELDEN 8761).
- 3  HIGH VOLTAGE WIRE INSTALLED ACCORDING TO LOCAL WIRING CODE.
- 4 INSTALL LOW VOLTAGE WIRES (PROBES, COMPUTER LINK OR POTENTIOMETER WIRES) AT LEAST 12 INCHES (30cm) AWAY FROM HIGH VOLTAGE WIRES (120/230VAC, 24VDC). ALWAYS CROSS HIGH AND LOW VOLTAGE WIRES AT A 90-DEGREE ANGLE.
- 5  THE CURRENT SHALL NOT EXCEED 10A AT EACH OUTPUT (ACTUATOR 1-2) FOR THE GE-AIR/1 AND GE-AIR/2.
- 6  1 WIRE ONLY PER GREEN TERMINAL. USE WIRE CONNECTOR IF YOU WANT TO CONNECT MORE THAN 1 WIRE. WIRES MUST NOT BE BIGGER THAN AWG #12 AND NOT SMALLER THAN AWG #28.
- 7  USE SHIELD FOR SHIELDING PURPOSE ONLY. CONNECT THE POTENTIOMETER SHIELD TO THE GE-AIR CONTROL ONLY AND THE COMMUNICATION SHIELD TO THE MASTER CONTROL ONLY. NEVER LEAVE THE SHIELD UNCONNECTED. NEVER CONNECT BOTH END OF A SHIELD. THE USE OF A SHIELD IS **MANDATORY**.
- 8  SEE THE MASTER CONTROL FOR THE JP1 SETTING. IF NOT STATED USE, JP1 MUST BE SET TO PIN 1-2 (ID1).
- 9  THE CURRENT MUST NOT EXCEED 4A FOR THE GE-AIR/24.

INSTALLATION GE-AIR SECTION B

SECTION B

GE-AIR INSTALLATION

This section will inform the electrician on proper wiring and installation procedures for the GE-AIR.

The manufacturer recommends that the following installation instructions be followed to as closely as possible, and that all work be performed by a certified electrician. Failure to do so may void the warranty.

Unpacking

Unpack the GE-AIR and inspect contents for damage. Should the contents appear to be damaged, contact your local distributor to return the equipment.

The package should contain the following standard items:

- 1 GE-AIR Module
- 4 Brackets / 4 screws
- 1 Spare fuse
- 1 Installation / User's Guide

Mounting Hardware Required

This is the list of the mounting hardware needed, which is not included with the product:

- Shielded three-wire cable, AWG #22 (to extend potentiometer)
- Shielded two-wire twisted pair low capacitance cable, AWG #22 (used for communication). See electrician notes for capacitance selection.
- 4 screws (to hang the unit onto the wall)
- Screwdrivers
- Soldering iron kit or approved sealed connectors

General installation guidelines

GE-AIR Module

- It is recommended to install the unit in a hallway to limit the GE-AIR exposure to noxious gases.
- In order to avoid condensation problems inside the module, it is recommended to install the GE-AIR on an inside wall. If it is not possible, use spacers to have an air gap between the wall and the GE-AIR.
- It is required to install the GE-AIR right side up with the cable entry holes facing down (see figure 1).
- The enclosure is watertight, but do not spray water or submerge the GE-AIR in water. Cover it carefully with plastic when cleaning the room.
- The GE-AIR should be installed in easy-access location but away from damaging elements (heat, cold, water, direct sunlight, ...).
- Do not drill the face, the side, the top or the underside of the module.
- Do not install the GE-AIR module near high-voltage equipment, power supply or transformer.

Electrical Cables

- All electrical cables must be installed according to local wiring codes.
- All potentiometer cable shields must be connected to the GE-AIR power ground only. The shield is needed to protect the modules against any electromagnetic interference generated by lightning or nearby operating machinery.
- Never use the shield as a conductor.
- Connect only one end of the shield to the ground of the GE-AIR.
- Use separate conduits for the low voltage cables (communication) and the high voltage cables. There must be at least 1 foot (30 cm) between low-voltage and high-voltage conduits.
- If a low voltage cable has to cross over a high voltage cable, make this crossing at 90°.
- All cable connections must be soldered or done with approved sealed connectors.
- See master control for the length of the communication wire.
- It is prohibited to use overhead cables outside the building.

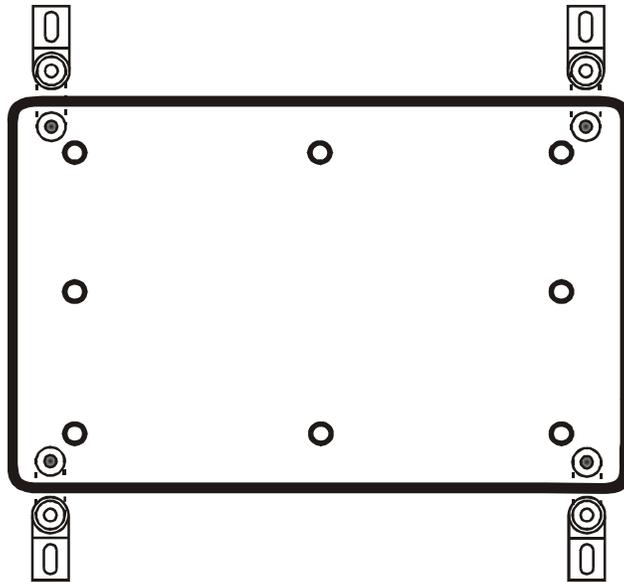
Electrical Power

- Protection from electrical surges should be included in the planning of each installation.
- Every module should have a separate breaker to avoid possible problem.

Mounting

- The enclosure must be mounted in a location that will allow the cover to be completely opened right up against the wall.
- Fasten the four brackets to the four mounting holes on the back of the enclosure, using the four screws provided with the brackets.
- Then mount the enclosure on the wall by inserting screws through the brackets' adjustment slots, into the wall. Make sure to position the enclosure so that the power supply cord extends out of the bottom section of the enclosure.
- Once you have adjusted the controller position, tighten the four mounting screws (see figure 1).

FIGURE NO. 1 Mounting Position and Devices



Board Layout

FIGURE NO. 2 GE-AIR/1 and GE-AIR/2 Electronic Inlet Board

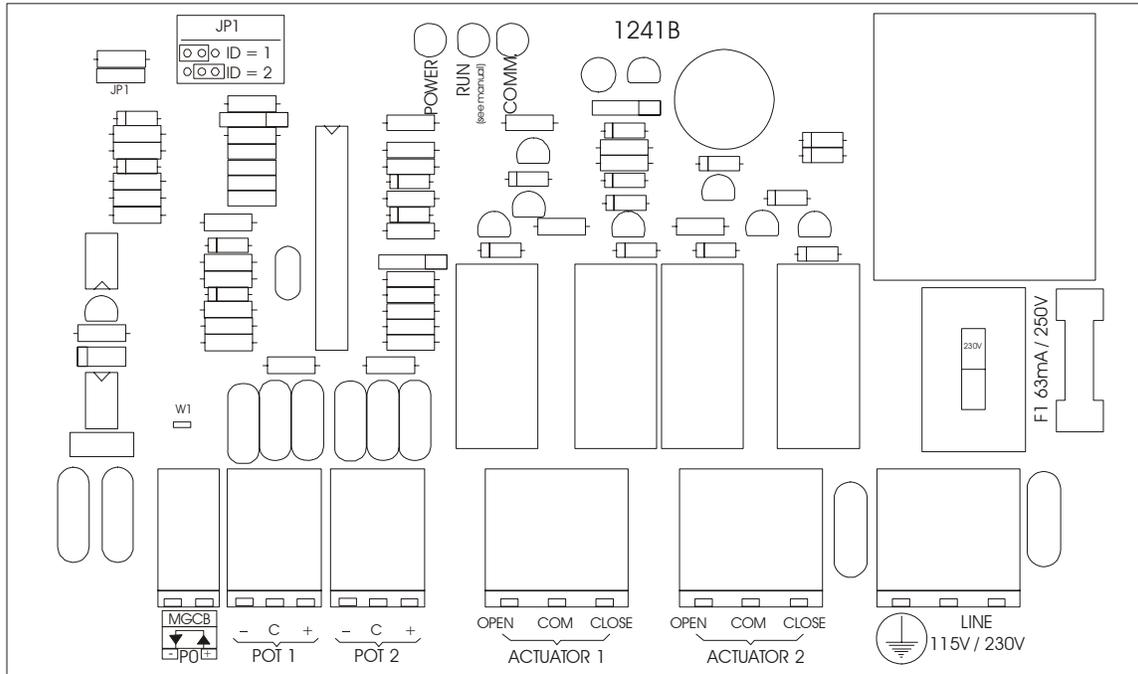
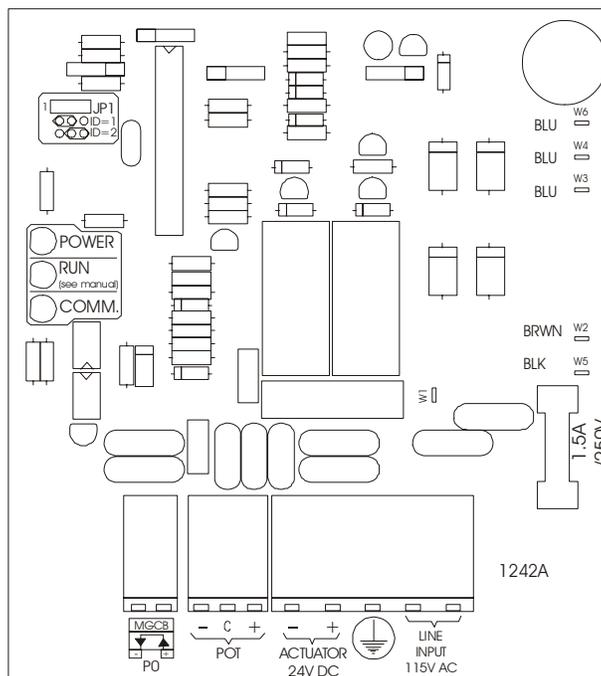


FIGURE NO. 3 GE-AIR/24 Electronic Inlet Board



SECTION B

Main Board LED Description

Here's a description of the LED on the main board.

- Power:** Indicates the module is powered.
- Run:** Indicates the module status. The LED will blink every $\frac{1}{4}$ of a second if the communication is correct. It will quickly blink 2 times per seconds if the communication is erratic. In this case, the actuator will go to a backup position or stay at its current position as programmed in the master control.
- Comm:** This LED will light up if the loop is closed correctly.

Connection Procedure

Detailed Wiring Diagrams

Typical Actuator Wiring

The GE-AIR module allows the user to control opening or closing of the inlet. The inlet has to be calibrated, otherwise the actuator positioning will be erratic (see master control manual to calibrate the inlet).

FIGURE NO. 4 Typical Actuator Wiring 115/230VAC for GE-AIR/1 and GE-AIR/2

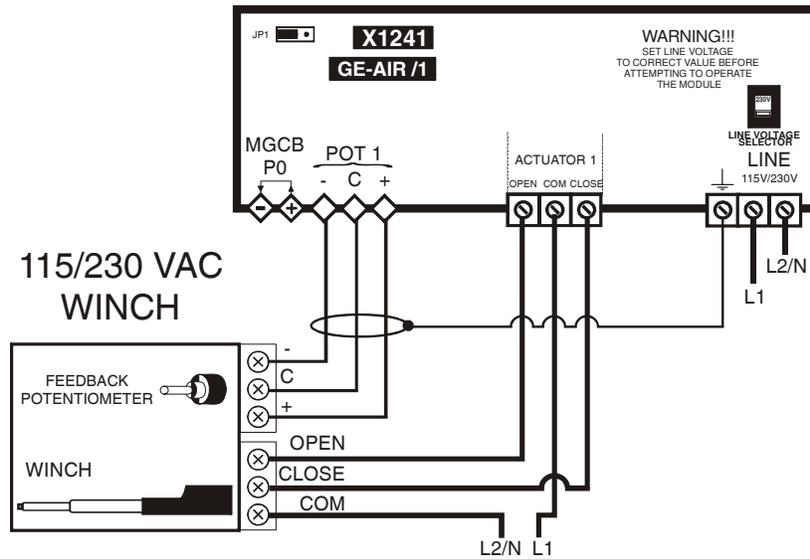
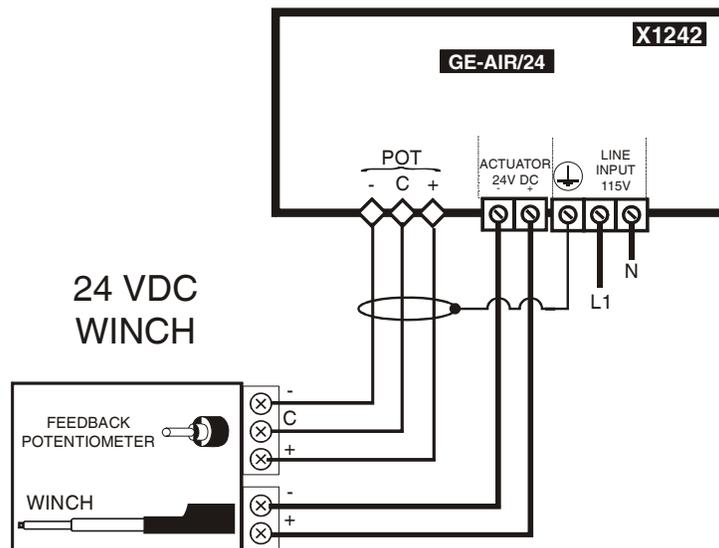


FIGURE NO. 5 Typical Actuator Wiring 24VDC for GE-AIR/24



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GE-AIR INSTALLATION

FIGURE NO. 6 Typical Actuator Wiring 24VDC for GE-AIR/1 and GE-AIR/2

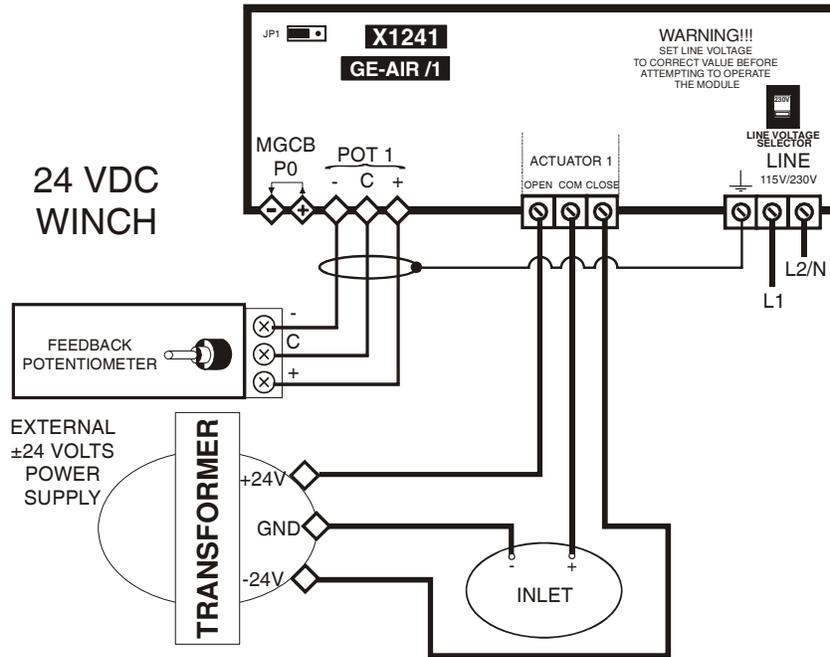
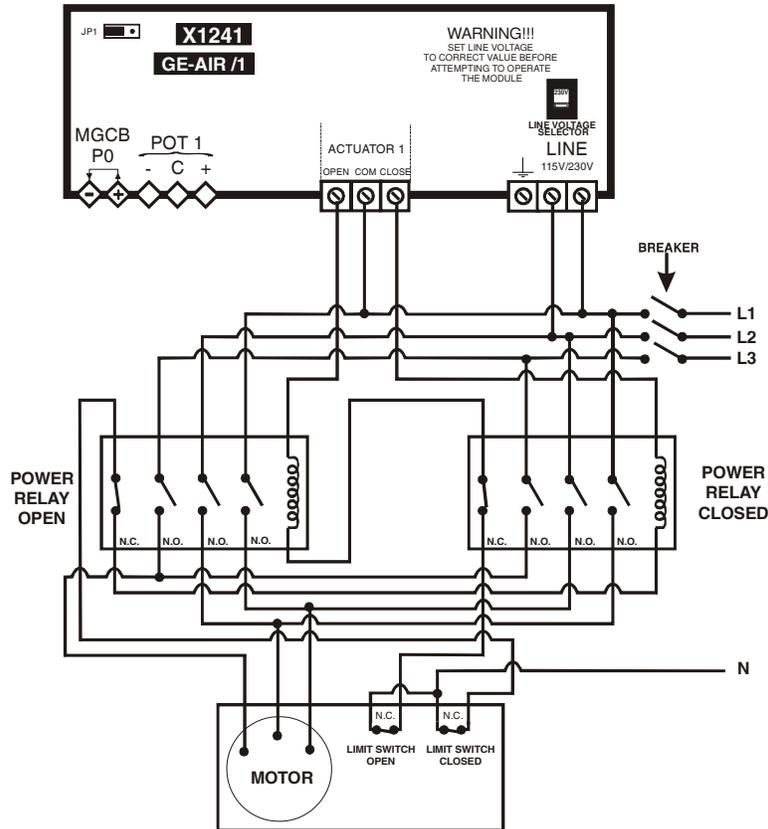


FIGURE NO. 7 Typical Actuator Wiring 3 phase for GE-AIR/1 and GE-AIR/2

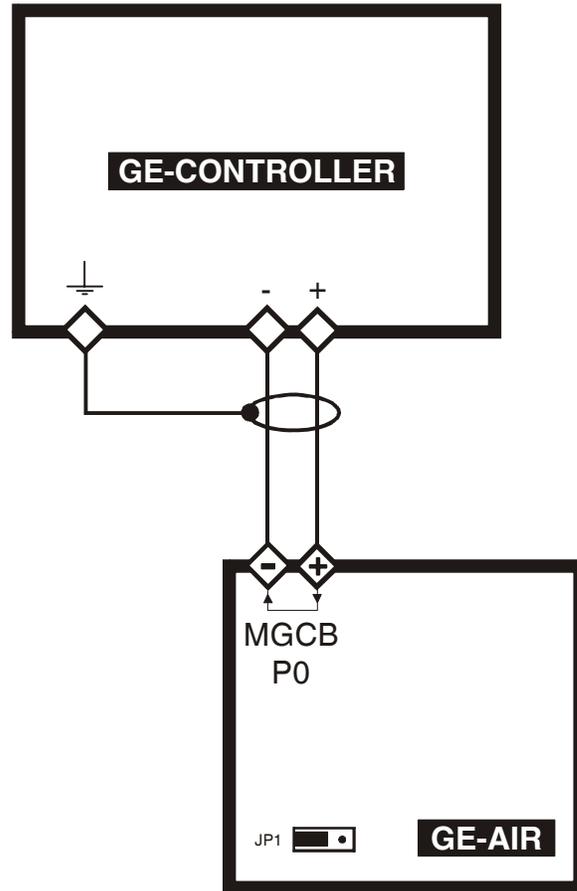


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Communication Port Connection

Always connect the GE-AIR positive communication port terminal block with the module positive communication port terminal block. Do the same with the negative communication port.

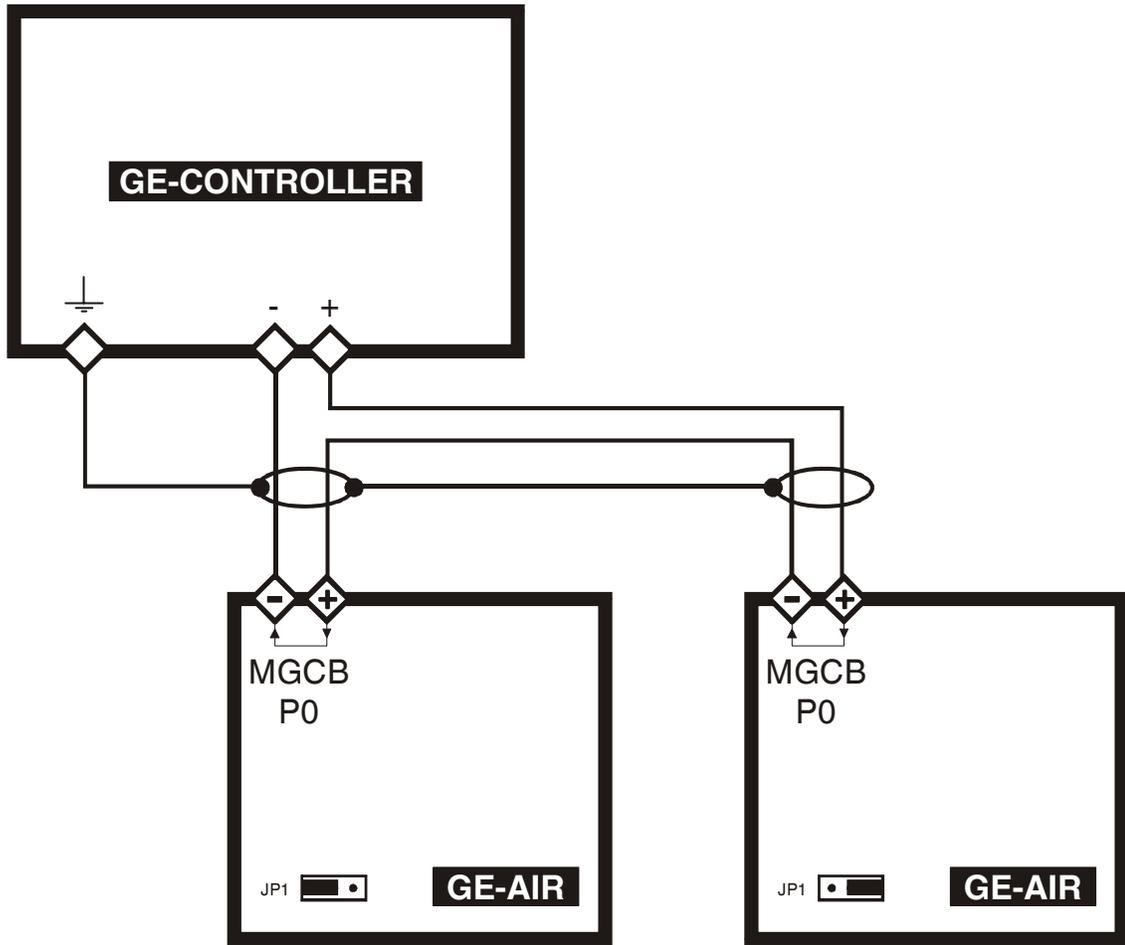
FIGURE NO. 8 Wiring Diagram for 1 GE-AIR



SECTION B

GE-AIR INSTALLATION

FIGURE NO. 9 Wiring Diagram for 2 GE-AIR on same communication port



SECTION B

Powering Up Procedure

Once the GE-AIR is properly mounted on the wall with the actuator connected, perform the following steps:

Adjust the Line Voltage Selection Switch (not available on GE-AIR/24)

This switch is located on the bottom electronic board (see figure 3) and adapts the GE-AIR/1 or GE-AIR/2 to 115 VAC or 230 VAC line voltage.

Set the line voltage switch (115VAC/230VAC) inside the GE-AIR/1 or GE-AIR/2 to the correct value before powering up the module.

Verify all Connections

Ensure the flat cable between the bottom electronic board and the faceplate electronic board is properly connected.

Seal all cable entry holes.

Hermetically Close the GE-AIR

Close the front panel and the lower access cover and secure them with the screws previously removed.

GE-AIR INSTALLATION

Inlet module (GE-AIR/1 and GE-AIR/2)

DESCRIPTION	VALUE
Weight	2.2lb (1 kg)
Size	12 1/4" x 11" x 4 3/4" (32 cm x 28.8 cm x 11.5 cm)
Input Power (SW1 on 115V)	92 to 125 VAC, 12 watts maximum
Input Power (SW1 on 230V)	184 to 250 VAC, 12 watts maximum
OUTPUT RELAY	
Maximum Current	10A, 120/208/240 VAC
Maximum Load	1/2HP @ 250 VAC, 1/4HP @ 125 VAC
POTENTIOMETER INLET	
Potentiometer inlet	0-10K ohm
Maximum wire length	500 feet (150 m)
Recommended wire	3 strands, shielded, AWG #22

Inlet module (GE-AIR/24)

DESCRIPTION	VALUE
Weight	4.4 lb. (2 kg)
Size	12 1/4" x 11" x 4 3/4" (32 cm x 28.8 cm x 11.5 cm)
Input Power	92 to 125 VAC, 90 watts maximum
OUTPUT RELAY	
Maximum Current	4A
POTENTIOMETER INLET	
Potentiometer inlet	0-10K ohm
Maximum wire length	500 feet (150 m)
Recommended wire	3 strands, shielded, AWG #22

Important Notice:

- Low-voltage and high-voltage wire must be passed through different conduits at least 1 foot (30 cm) apart. If low-voltage and high-voltage conduits must be crossed, the crossing must be at a 90-degree angle.
- All wiring must be made by a certified electrician and conform to local electrical regulations.

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Limited Warranty

The manufactured equipment and supplied components have gone through rigorous inspection to assure optimal quality of product and reliability. Individual controls are factory tested under load, however the possibility of equipment failure and/or malfunction may still exist.

For service, contact your local retailer or supplier. The warranty period shall be for two years from manufacturing date. Proof of purchase is required for warranty validation.

In all cases, the warranty shall apply only to defects in workmanship and specifically exclude any damage caused by over-voltage, short circuit, misuse, acts of vandalism, lightning, fortuitous events, acts of God, flood, fire, hail or any other natural disaster. Any unauthorized work, modification or repair on this product automatically voids the warranty and disclaims the manufacturer from all responsibility.

The manufacturer assumes only those obligations set forth herein, excluding all other warranties or obligations. This warranty stipulates that in all cases the manufacturer shall be liable only for the supply of replacement parts or goods and shall not be liable for any personal injury, damages, loss of profits, interrupted operations, fines for infringement of the law or damages to the production of the PURCHASER and the PURCHASER shall take up the defense and hold the manufacturer faultless regarding any legal or extra legal proceedings, notice, or claim by the customer or by a third party, and regarding any legal and extra legal expenses and fees brought forward on by such damages.

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September 2, 2011