

Laboratory Room Controller and Enclosure

Product Description



The Laboratory Room Controller (LRC) is a multi-application equipment controller designed to provide Direct Digital Control (DDC) for a laboratory room with a single fume hood controller, or up to four fume hood controllers through a Fume Hood Flow Module (FFM). The LRC, which controls room temperature and pressurization, can operate stand-alone, with a field panel, or as part of a network.

Product Numbers

546-00360 Laboratory Room Controller –
Pneumatic Actuation
(Appl. 2600, 2601, 2602, and 2603)

546-00362 Laboratory Room Controller –
Electronic Actuation
(Appl. 2600, 2611, 2612, and 2613)

Warning/Caution Notations

WARNING		Personal injury/loss of life may occur if you do not follow procedure as specified.
CAUTION		Equipment damage or loss of data may occur if you do not follow procedure as specified.

Required Tools

- Medium slotted screwdriver
- 1/8-inch flat-blade screwdriver
- Medium Phillips head screwdriver
- 1/4-inch nut driver
- Hammer
- Electric drill
- 1/2-inch drill bit
- Four 4-inch spring wing toggle bolts with mushroom heads
- Four washers (1/4-inch ID, 3/4-inch OD)
- Four anchors (sleeve or stud)
- Level

- Marker
- Tape measure
- Pencil

Expected Installation Time

45 minutes

Prerequisites

- The enclosure should be at least 5 feet away from large motors and radio equipment.
- Field level network (FLN) with 24-volt wiring roughed in.
- All damper and valve actuators are installed.

Mounting Instructions

1. Remove the enclosure cover.
2. Remove the appropriate conduit knockouts. See Figure 1.
3. On the wall or the surface on which you will mount the enclosure, measure and mark a level line.
4. Align the top edge of the enclosure on the level line made in Step 3. Mark the position of the four mounting holes on the rear panel of the enclosure.
5. Drill the two mounting holes. Insert the wall anchors.



CAUTION:

When hanging the controller, it is recommended that you use the enclosure mounting holes as a template for marking the holes on the wall. The metal shavings from drilling new holes in the controller can cause severe damage to the controller.

6. Place the washers on the mounting bolts. Mount the enclosure on the wall.

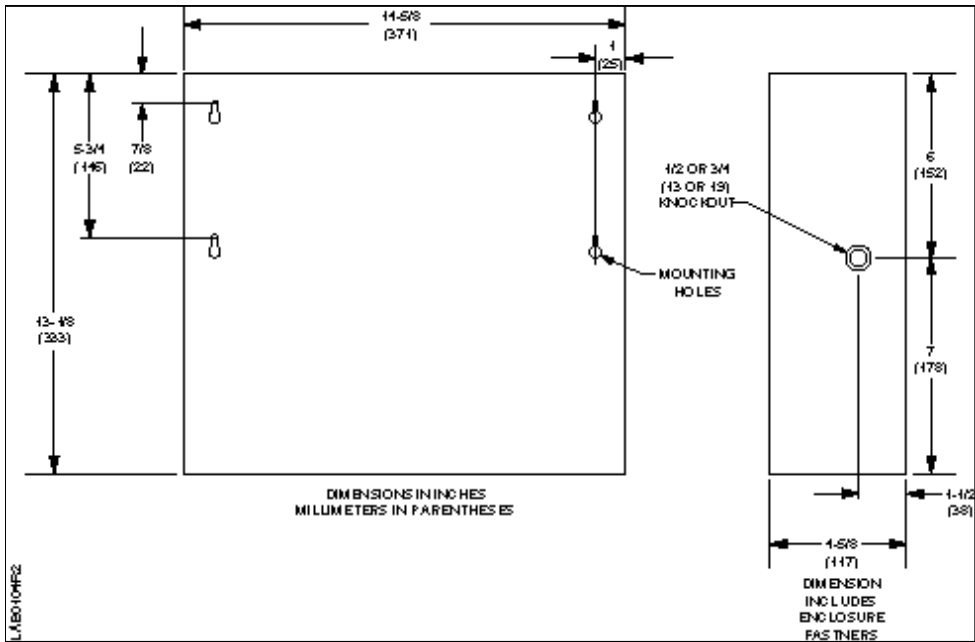


Figure 1. Enclosure Dimensions and Knockouts.

Airflow and Pneumatic Connections – Pneumatic Actuation

Using Figure 2 as a guide, make the appropriate connections to the ports on the side of the LRC.

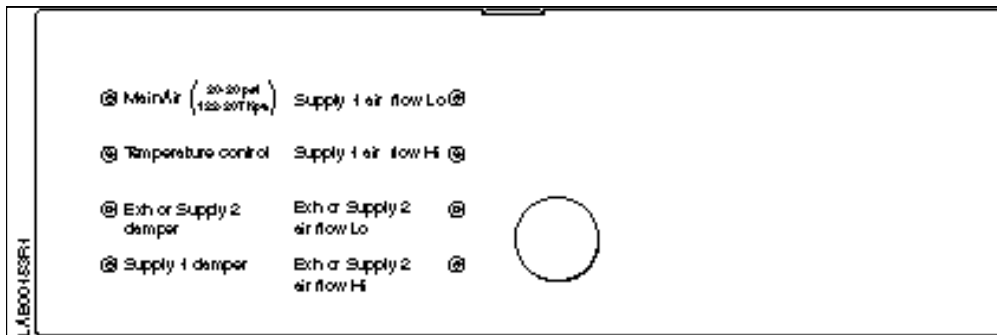


Figure 2. Airflow and Pneumatic Connections for Pneumatic Actuation.

Airflow Connections – Electronic Actuation

Using Figure 3 as a guide, make the appropriate connections to the ports on the side of the LRC.

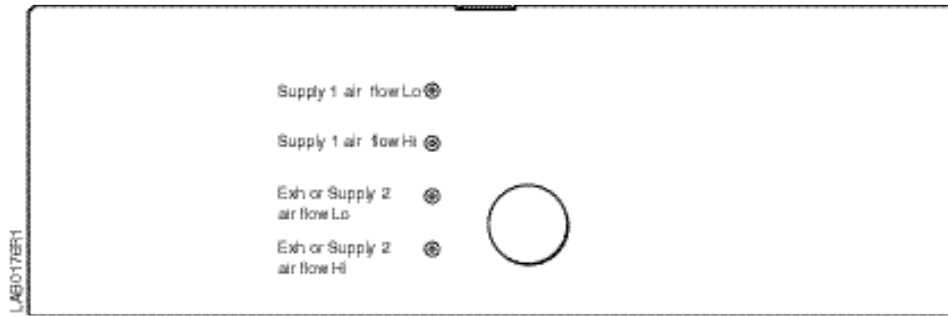


Figure 3. Airflow Connections for Electronic Actuation.

Wiring Connection Instructions

NOTE: Be sure to follow all safety regulations and local codes when installing this equipment.

1. If the LRC will be used with a field panel, disconnect the field level network (FLN) trunk from the field panel.
2. Connect the FLN trunk wiring (Figure 4). After all controllers are connected to the FLN reconnect the FLN trunk to the field panel.
3. Connect the point wiring for the appropriate LRC applications. For applications using pneumatic

actuators, see Figure 5. For applications using electronic actuators, see Figure 6. Wires shown in black must be connected in the field, while those shown in gray are wired in the factory.



CAUTION:

The LRC DOs control 24 Vac loads only. The maximum rating is 12 VA for each DO. For higher ratings an interposing relay must be used.

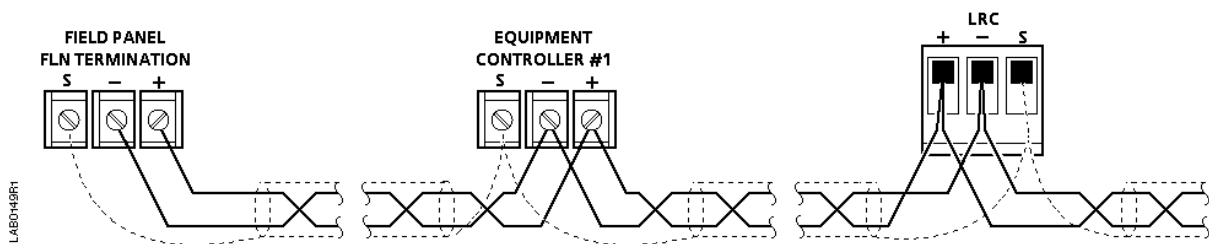


Figure 4. FLN Trunk Wiring.

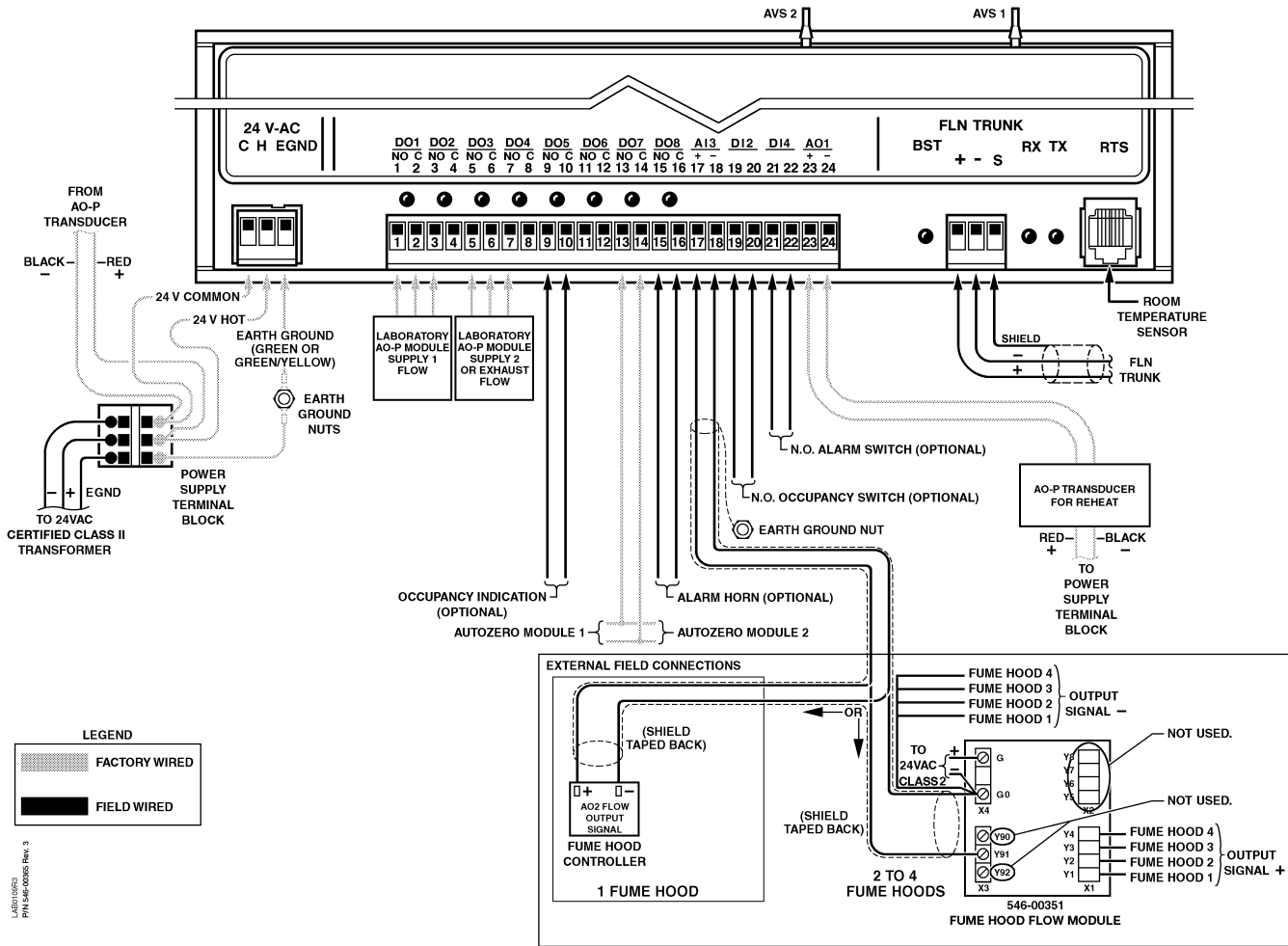


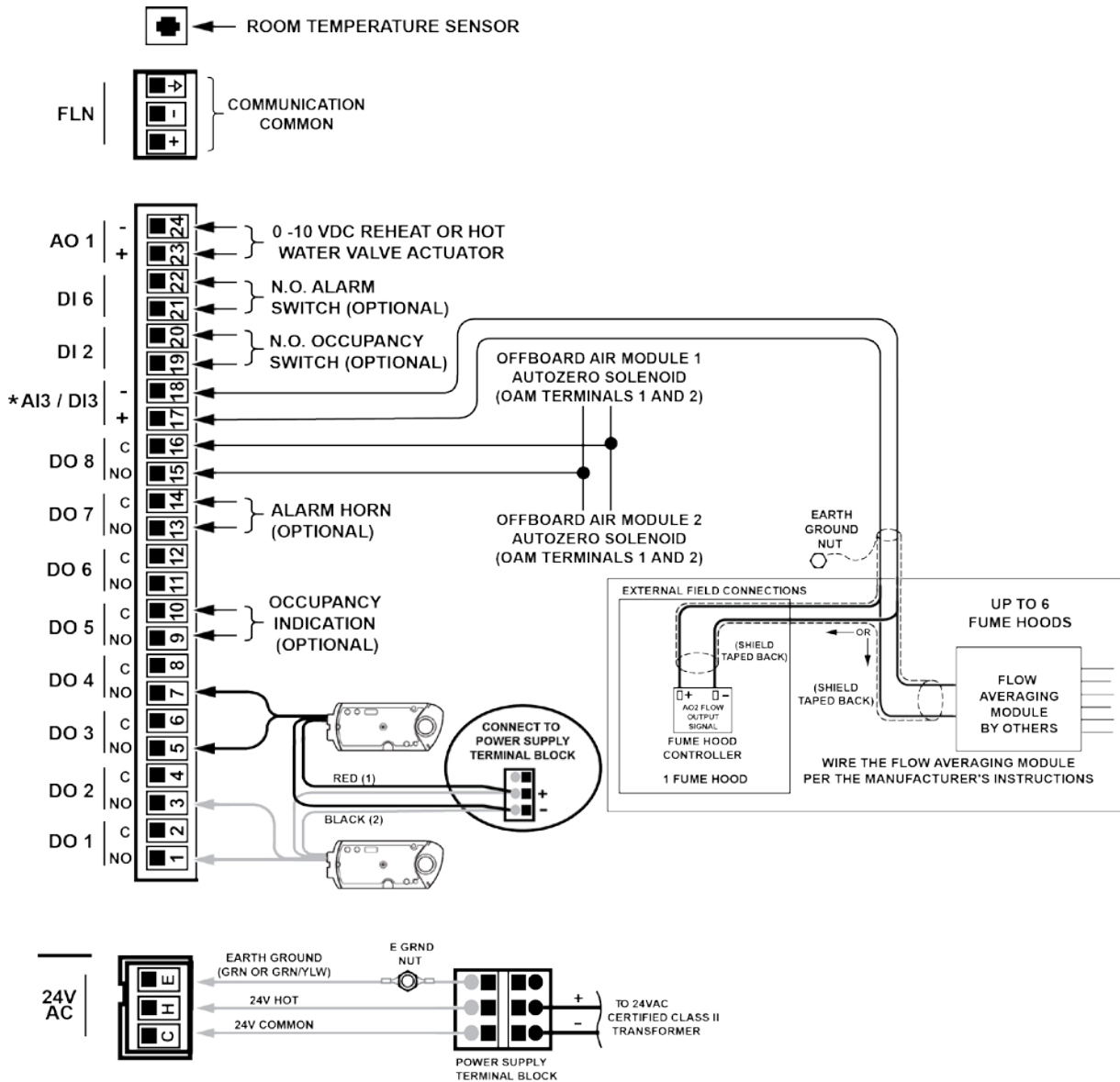
Figure 5. Controller Board Wiring—Pneumatic Actuation.

NOTE: Wires that need to be connected are indicated in black on the diagram; those shown in gray are wired in the factory.



CAUTION:

If the LRC is not connected as shown, it is not resistant to electrical surges. It is also susceptible to interference from other equipment.



LAB0211R1

* AI3 COMES FROM FACTORY SET TO 0-10V. ON CIRCUIT BOARD UNDER CTLR COVER, SWITCH "S1" CONTROLS AI3. AI3 CAN BE SET TO 4-20mA IF DESIRED USING SWITCH S1.

Figure 6. Controller Board Wiring—Electronic Actuation.

NOTE: Wires that need to be connected are indicated in black on the diagram; those shown in gray are wired in the factory.



CAUTION:

If the LRC is not connected as shown, it is not resistant to electrical surges. It is also susceptible to interference from other equipment.

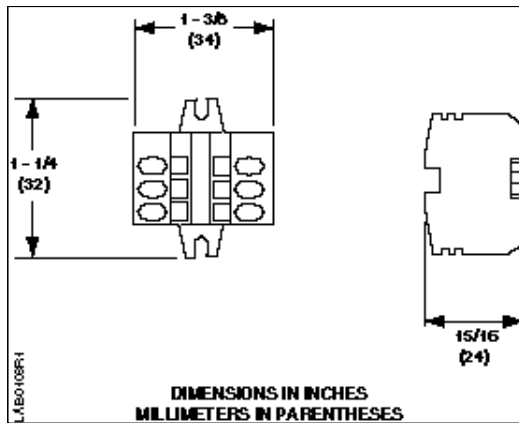


Figure 7. Terminal Block.

5. Connect a certified 24 Vac Class II power source to the LRCs power supply terminal block by inserting a 1/8-inch flat-blade screwdriver into a rectangular slot on the terminal block. The screwdriver will come into contact with a lever. Continue applying pressure until the lever releases and moves out of the way. Insert the wire and then remove the screwdriver (Figure 7).

6. For applications that use the electronic actuator, connect a certified 24 Vac Class II power source to each unit on terminal block J1. Separate power sources may not be used for the electronic actuator and the LRC.



WARNING:

This actuator requires a maximum of 20 VA, 24 Vac source. DO NOT connect any other non-isolated devices to the transformer that powers the electronic actuator.

7. Replace the enclosure cover and tighten the cover screws 1/4 turn.

The installation is now complete.

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