

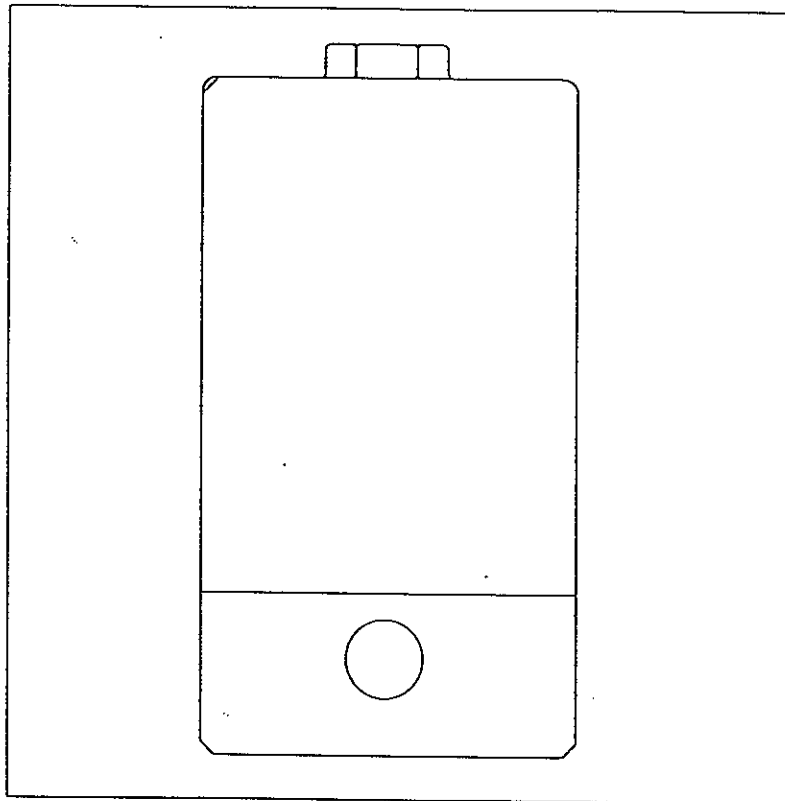
**Jordan Controls, Inc.**

IM-0596

**EC-10809**

**Instruction Manual**

**BATTERY  
BACK-UP  
MODULE**



# GENERAL INFORMATION

## TABLE OF CONTENTS

2	.....Receiving/Inspection/Storage
2	.....Identification
2	.....Equipment Return/Return Goods Authorization
2-3	.....Product Specifications
3-4	.....Typical Wiring Diagrams
4	.....Installation Dimensions

## IDENTIFICATION LABEL

An identification label is attached to each module cover. The serial number is also stamped on the aluminum housing, directly above the conduit entry. When ordering parts, requesting information, or service assistance, please provide all of the label information.

### EXAMPLE

MODEL NUMBER: EC 10809



SERIAL: 1627C92-23456

PH/HZ/V/A: 1/60/120/1

MODEL NUMBER: EC 10809

Product Series 

SERIAL NUMBER: 1627 C 92 - 23456

Sequential Number   
Month built  Job Reference No.   
Year built 

PH/HZ/V/A: 1/60/120/1

PH=Phase

HZ=Hertz

V=Voltage

A=Amp

## RECEIVING

Once you have received the module, carefully inspect for shipping damage. Damage to the shipping carton is usually a good indication that it has received rough handling.

Report all damage immediately to the freight carrier and Jordan Controls, Inc.

## INSPECTION

Carefully unpack the module - taking care to save the shipping carton and any packing material should return be necessary. Verify that the items on the packing list or bill of lading agree with your own.

## STORAGE

If the module will not be installed immediately, it should be stored in a clean, dry area where the ambient temperature is not less than -20° F or greater than 150° F. The module should not be stored in a corrosive environment.

## EQUIPMENT RETURN

For your convenience, Jordan Controls, Inc., will provide an efficient method of returning equipment for repair.

### Returned Goods Authorization

A Returned Goods Authorization (RGA) number is required to return any equipment for repair. This must be obtained from the Jordan Controls Service Department. The equipment must be sent to the following address after the RGA number is issued:

Jordan Controls, Inc.  
5607 West Douglas Avenue  
Milwaukee, Wisconsin 53128  
Attn: Service Department

To facilitate quick return and handling of your equipment include:

RGA Number  
Your Company Name  
Address  
Repair Purchase Order Number  
Brief description of the problem

## PRODUCT SPECIFICATIONS

### BATTERY BACK-UP MODULE

#### Electrical

Line Voltage: 120/240 Vac (terminal selectable)  
Frequency: 50/60 Hz  
Field Wiring Terminations: barrier terminal block  
Wire size range 26-14 AWG

#### Signals

Signal Inputs:  
4 to 20 command (+)  
Signal Outputs:  
4 to 20 command (normal operation)  
4 to 20 generated for power loss positioning  
24 V and 15 V bus back-up power  
Battery OK indicator path

#### Mechanical

Mass: Chassis form: 0.5 lbs. (0.2 kg)  
Enclosed form: 3.5 lbs. (1.6 kg)  
Conduit entry: Two 1/2 - 14 NPT

#### Environmental

Temperature Limits: -20° F to +130° F (-29° C to +54° C)  
Enclosure: Explosion-Proof for Class I, Division 1, Groups C and D;  
Dust-ignition-proof for Class II, Division 1, Groups E, F, and G.  
Also rated for Type (IP65) indoor/outdoor use.

# PRODUCT SPECIFICATIONS

## Test

### Equipment and Materials

1. 50 ohm, 25W resistor.
2. 1000 ohm, 1/2 W resistor.
3. 220 ohm, 1/4 W resistor.
4. Two ammeters capable of measuring milliamps.
5. Multimeter for continuity and voltage measurements.
6. Adjustable dc power supply capable of 35 V at 1A.

### Setup

1. Connect a resistive load of 50 ohms at 25 W to TB3-1 (+) and TB3-3 (-).
2. Connect another resistive load of 1k ohms at 1/2 W to TB3-2 (+) and TB3-3 (-).
3. To TB3-4, connect a 220 ohm resistor in series with ammeter-1 positive and ammeter 1 common to TB3-3.
4. Set switch 1 to 120 Vac.
5. Connect lead wires for ac line to TB1-1 and TB1-2.
6. Remove fuse on circuit board and attach ammeter-2 across clips, common to clip by green LED.
7. Disconnect the battery, connect a 0 to 40 Vdc power supply (+) to fuse clip by green LED, (-) to anode of D2.

### Normal Operation

1. Turn on dc supply and adjust to 32 Vdc. approximately 0 should register on ammeter 2.
2. Power up circuit with 120 Vac.
3. Verify: a) power supply at 32 Vdc.  
b) charge current is about 30 to 40 mA on ammeter 2.  
c) continuity between TB3-4 and TB3-5

### Back-up Operation

1. Turn off ac.
2. When battery power switches into operation, verify:
  - a) voltage across 50 ohm resistor should be 32 Vdc
  - b) voltage across 1K resistor also should be 32 Vdc
  - c) ammeter 2 reads -650 mA

NOTE: 50 ohm resistor will heat up.

3. Verify 4 to 20 mA signal out of TB3-4. Verify command can be adjusted from 4 to 20 by trimming R1.
4. The battery will disconnect after 3 to 4 minutes and shut down circuitry. Ammeter 2 reads -1 to -2 mA.

### Battery Low Indicator

1. Attach an LED and a 2.2K resistor to TB3-6. Attach PB3-7 to ground.
2. Restore 120 Vac.
3. With dc power still set to 32 Vdc, LED should be lit.
4. Slowly reduce dc voltage, LED should go out at 30 Vdc.
5. Shut off 120 Vac, then power supply. Disconnect power supply.

### Battery

1. Plug in a battery pack.
2. Turn on 120 Vac.
3. Verify ammeter 2 is between 20 to 80 mA (depends on level of battery pack charge).

### End of Test

1. Disconnect test equipment and wiring.
2. Replace fuse.

## MODEL EC-10809

### WITH LA/MV/SM/VA-1000 SERIES ACTUATOR

This option provides back-up power to the actuator control and a generated 4 to 20 mA command for actuator power loss positioning.

Under normal conditions, the normal 4 to 20 mA command is routed through the battery back-up board. The board also trickle charges the battery to keep the unit fully ready to respond.

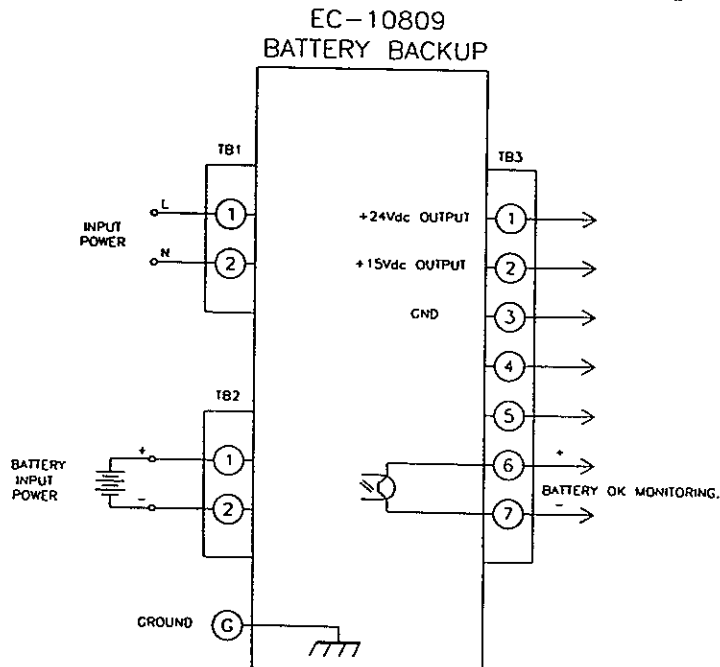
When power is lost, a 4 to 20 mA command set and generated on the battery back-up circuit board is sent to the actuator. The dc voltage and 4 to 20 mA command is provided to position the actuator to a desired position upon power line interruption. The battery back-up will be active for a minimum of three minutes after power loss.

Once power is restored, the circuitry resets. This allows the normal 4 to 20 mA command to reposition the actuator and resumption of battery charging. There is enough reserve power to position the actuator five consecutive times without any charge period. A fully discharged battery will take 12 to 16 hours to charge.

A battery OK path is provided to indicate when battery voltage has fallen below acceptable voltage levels.

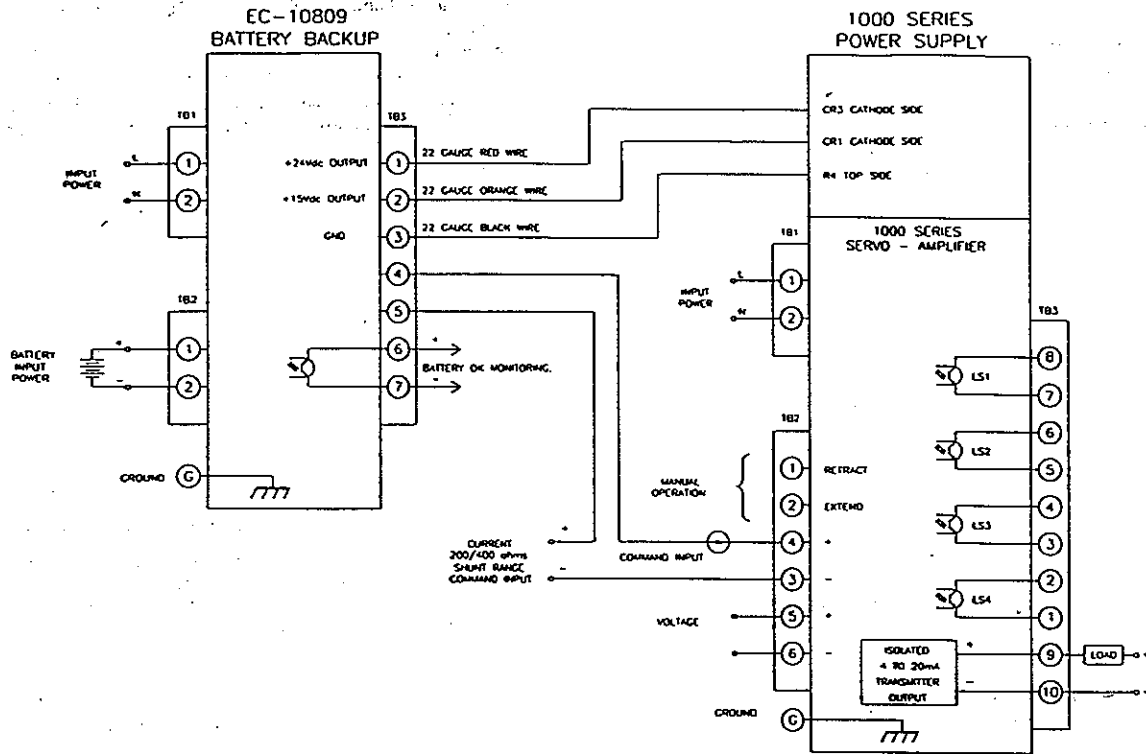
The module is furnished in a Type 4 (IP65) enclosure suitable for installation in a Class I, Division 1, Group C or D location, or a Class II, Division 1, Group E, F, or G location. In this form, it can also be close coupled to the actuator, if desired.

## TYPICAL WIRING DIAGRAM



# TYPICAL WIRING DIAGRAM

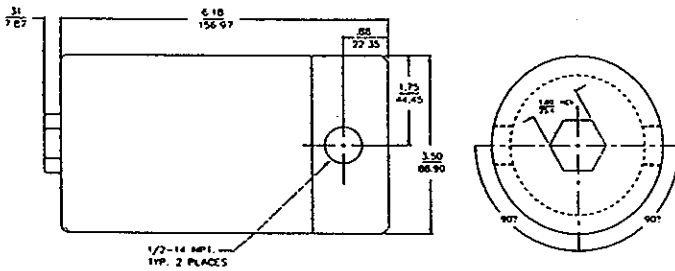
## INTERCONNECT WIRING



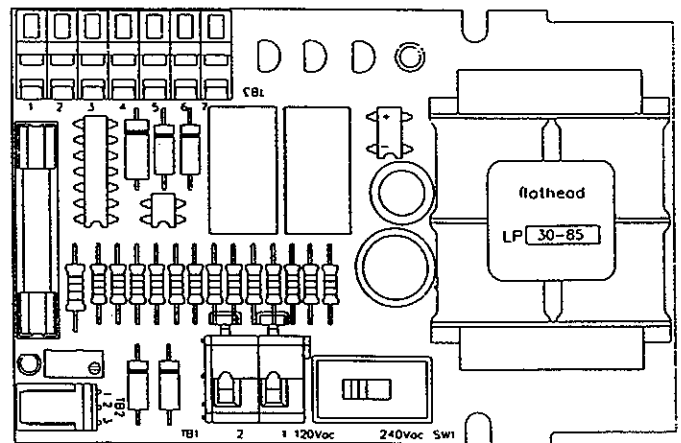
## INSTALLATION DIMENSIONS

### EC-10809 SIGNAL CONVERSION MODULE

Shown in Type 4 (IP65)/Explosion-Proof Enclosure



### BOARD LAYOUT



## Jordan Controls, Inc.

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IM-0596 1/95

Jordan Controls reserves the right to institute changes in design, materials, or specifications without notice in keeping with our policy of continued product improvement.

