Instruction Manual

Jordan CONTROLS

IM-0580

RP-4000 Reserve Power Control

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Due to wide variations in the terminal numbering of actuator products, actual wiring of this device should follow the wiring drawing supplied with the unit.

GENERAL INFORMATION

INTRODUCTION

Jordan Controls, Inc., designs, manufactures, and tests its products to meet national and international standards. For these products to operate within their normal specifications, they must be properly installed and maintained. The following instructions must be followed and integrated with your safety program when installing, using, and maintaining Jordan Controls products:

Read and save all instructions prior to installing, operating, and servicing this product.

If any of the instructions are not understood, contact your Jordan Controls representative for clarification.

Follow all warnings, cautions, and instructions marked on, and supplied with, the product.

Inform and educate personnel in the proper installation, operation, and maintenance of the product.

Install equipment as specified in Jordan Controls installation instructions and per applicable local and national codes. Connect all products to the proper electrical sources.

To ensure proper performance, use qualified personnel to install, operate, update, tune, and maintain the product.

When replacement parts are required, ensure that the qualified service technician uses replacement parts specified by Jordan Controls. Substitutions may result in fire, electrical shock, other hazards, or improper equipment operation.

Keep all actuator protective covers in place (except when installing, or when maintenance is being performed by qualified personnel), to prevent electrical shock, personal injury, or damage to the actuator.

WARNING

Before installing the actuator, make sure that it is suitable for the intended application. If you are unsure of the suitability of this equipment for your installation, consult Jordan Controls prior to proceeding.

WARNING - SHOCK HAZARD

Installation and servicing must be performed only by qualified personnel.

WARNING - ELECTROSTATIC DISCHARGE

This electronic control is static-sensitive. To protect the internal components from damage caused by static discharge, never touch the printed circuit cards without being statically protected.

RECEIVING INSPECTION

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.

Verify that the items on the packing list or bill of lading agree with your own.

STORAGE

If the actuator will not be installed immediately, it should be stored in a clean, dry area where the ambient temperature is not less than -20° F. The actuator should be stored in a non-corrosive environment. The actuator is not sealed to NEMA 4 until the conduit entries are properly connected.

EQUIPMENT RETURN

A Returned Goods authorization (RG) number is required to return any equipment for repair. This must be obtained from Jordan Controls. (Telephone: 414/461-9200) The equipment must be shipped, freight prepaid, to the following address after the RG number is issued:

Jordan Controls, Inc.
5607 West Douglas Avenue
Milwaukee, Wisconsin 53218
Attn: Service Department

To facilitate quick return and handling of your equipment, include:
- RG Number on outside of box
- Your Company Name, Contact Person, Phone/Fax #
- Address
- Repair Purchase Order Number
- Brief description of the problem

GENERAL INFORMATION

IDENTIFICATION LABEL

An identification label is attached to each RP-4000 panel. When ordering parts, requesting information or service assistance, please provide all of the label information.

EXAMPLE:

GENERAL DESCRIPTION

The RP-4000 Series is designed to provide stand-by power to operate 120 and 240 Vac single phase Jordan Controls actuators in the event line power is interrupted. Actuators with amplifiers can be configured to move to a preset position or provide a controlled shut down to the actuator. Actuators without amplifiers can be configured to move to either a full open or full closed position. Also, operation can be continued as normal up to the time specified on the model selected.

ABBREVIATIONS USED IN THIS MANUAL

A ..... Ampere
AC ..... Alternating Current
° C ..... Degrees Celsius
CW ..... Clockwise
CCW ..... Counterclockwise
DC ..... Direct Current
° F ..... Degrees Fahrenheit
G ..... Earth Ground
Hz ..... Hertz
in.lbs. ..... Inch Pounds
kg ..... Kilogram
L ..... Line (power supply)
lbs ..... Pounds
LVDT ..... Linear Variable Differential Transformer
mA ..... Milliamp
mfd ..... Microfarad
min ..... Minute
mm ..... Millimeters
N ..... Newton (force)
NEMA ..... National Electrical Manufacturing Association
Nm ..... Newton Meter
NPT ..... National Pipe Thread
Ph ..... Phase
PL ..... Position Limit Switch
RPM ..... Revolutions per Minute
sec ..... Second
TL ..... Torque Limit Switch
V ..... Volts
VA ..... Volt Amps
Vac ..... Volts ac
Vdc ..... Volts dc
VR ..... Variable Resistance
W ..... Watt

BASIC MODELS

RP-4010: This model provides up to 750VA / 450 W for a maximum full load run time of between 24 and 80 minutes depending on actuator selected.

RP-4020: This model provides up to 1425VA / 950 W for a maximum full load run time of between 13 and 180 minutes depending on actuator selected.

RP-4030: This model provides up to 2250VA / 1600 W for a maximum full load run time of between 14 and 200 minutes depending on actuator selected.

GENERAL DESCRIPTION

FEATURES

- Full two year warranty
- Remote mounted – Any mounting position
- High capacity, long life, sealed power supply
- Automatic reset on return of AC power
- ON/OFF power switch for actuator
- Battery / Actuator test operation switch
- Battery trickle recharge during normal running
- Auto sensing 50/60 Hz
- Standard NEMA 4 enclosure
- The RP-4000 is shipped fully charged from the factory
- Audible Alarms: battery discharge, low battery, overload, battery replacement needed.
- Indicators: battery status, battery discharge level, load level

OPTIONS

- Input voltage 120 Vac, single phase, 50/60 Hz or 240Vac, single phase, 50/60 Hz.
- Run to fail position with or without amplifier.
- Heater for condensation protection
- Preset positioning for units with 4-20mA control on loss of power.

SPECIFICATIONS

Input Voltage: 120 Vac, single phase, 50/60 Hz or 240Vac, single phase, 50/60 Hz

Output Voltage: 120 Vac, single phase, 50/60 Hz or 240Vac, single phase, 50/60 Hz

Full Recharge Time: 3 to 7 hours, depending on model and load on the RP-4000.

Maximum Run Time: See Cross Reference Chart on page 5 for specific values.

Enclosure: NEMA 4

Test Switch: This test switch provides a means to simulate a loss of power condition without physically removing main power to the system.

Power Switch: The power switch allows power to be removed from the actuator.

Battery Life: Approximately 5 years

Ambient Operating Temperature:
5° to 122° F (-15° to 50° C)

Approximate Weight:
RP-4010: 65 lbs (30 kg)
RP-4020: 80 lbs (36 kg)
RP-4030: 120 lbs (54 kg)

Enclosure Dimensions: Refer to drawing on page 11.
Height (A) x Width (B) x Depth (C)
RP-4010: 24 x 20 x 10 in (610 x 508 x 254 mm)
RP-4020: 24 x 20 x 10 in (610 x 508 x 254 mm)
RP-4030: 36 x 30 x 16 in (714 x 762 x 406 mm)

ACTUATOR CROSS REFERENCE CHART

ACTUATOR MODELS	INPUT VOLTAGE (AC)	MAX RUN TIME (min)		
		RP-4010	RP-4020	RP-4030
SM/LA/MC/MV-1110	120	80	180	200
SM/LA-1120	120	80	180	200
SM/LA-1150	240	80	180	200
SM/LA/MC-1170	240	80	180	200
LA/MV-1510	120	80	180	200
SM/MV-1530	120	52	113	121
SM/MV-1550	240	52	113	121
LA/MV-1570	240	52	113	121
SM-1520	120	24	43	54
SM-1590	240	24	43	54
SM/VA-1630	120	52	113	121
SM/VA-1650	240	52	113	121
SM-1730	120	80	180	200
SM-1720	120	52	113	121
SM-1750	240	80	180	200
SM/LA-5120	120	24	43	54
SM/LA-5190	240	24	43	54
SM/LA-5220	120 / 240	NA	13	19
SM/LA-5320	120 / 240	NA	NA	14
LA-2410	120	52	113	121
LA-2420	120	24	43	54
LA-2450	240	52	113	121
LA-2450	240	24	43	54
LA-2520	120 / 240	NA	13	19
LA-2620 (2500 thrust)	120 / 240	NA	13	19
LA-2620 (3600 thrust)	120 / 240	NA	NA	14
LA-2720 (2500 thrust)	120 / 240	NA	NA	14
LA-2720 (4700 thrust)	120 / 240	NA	NA	14

NOTES: Not compatible with three phase actuators.

Maximum run time is nominally approximate and is dependent on battery condition, charge state, actuator load and actuator idle time. For most applications under normal conditions, the maximum run time will not be less than 50% of the chart values.

INSTALLATION

MOUNTING

The outline and mounting dimensions for a standard unit are shown on pages 10 and 11. The enclosure must be mounted to have clearance to open the enclosure cover and so all conduit entries can be made.

This unit may be mounted in any position using mounting holes provided on the enclosure base.

WIRING

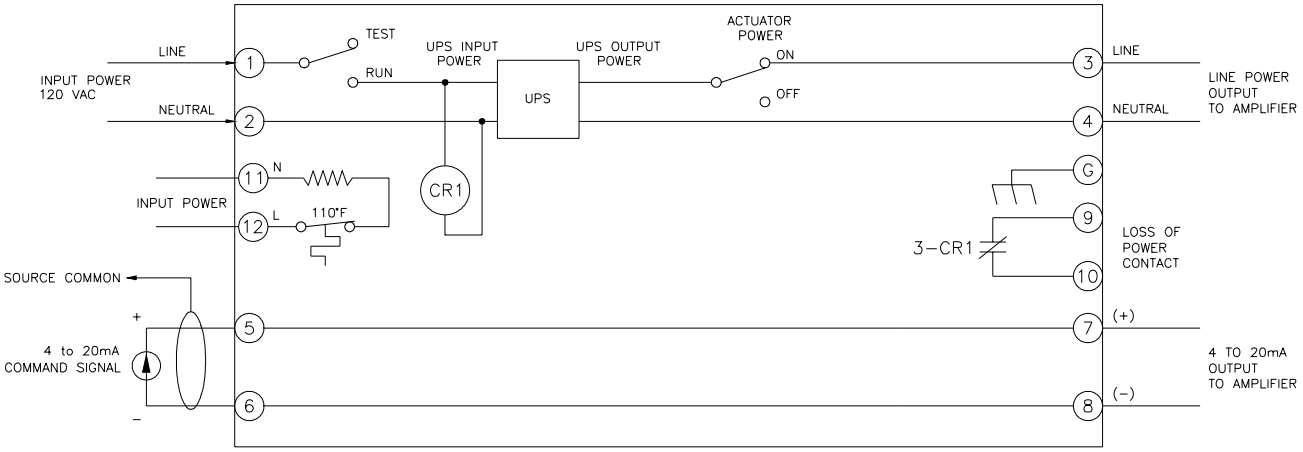
Warning: The supply output power of the RP-4000 UPS unit is constantly live. Exercise care when working with UPS output power. Disconnect UPS power before working on the electric components.

The wiring diagrams in this manual show the fundamental connections for single phase 120/240 Vac units. These units show an arrangement with input power, output power, 4-20mA input and output signals and relay to indicate loss of power. To meet special requirements certain items may not be supplied. In all instances the wiring diagram appropriate to the equipment will be supplied with each unit.

- All wiring should be done in accordance with prevailing codes by qualified personnel.
- **Actual wiring should follow the drawing supplied with the unit.**
- Fusing must be installed in the line power, and should be of the slow blow type.
- Wiring should be routed to the RP-4000 through two conduit openings by the customer. Conduit openings are to be punched by the installing electrician to ensure proper location and size in accordance with local codes. One conduit will contain input power and earth ground wires. The other conduit would then contain low level input and output signal wirng.
- It is required that all low level wiring be a shielded type with the shield grounded at source common.
- After installation, it is required that all conduits be sealed internally to prevent water damage and to maintain NEMA 4 enclosure rating.

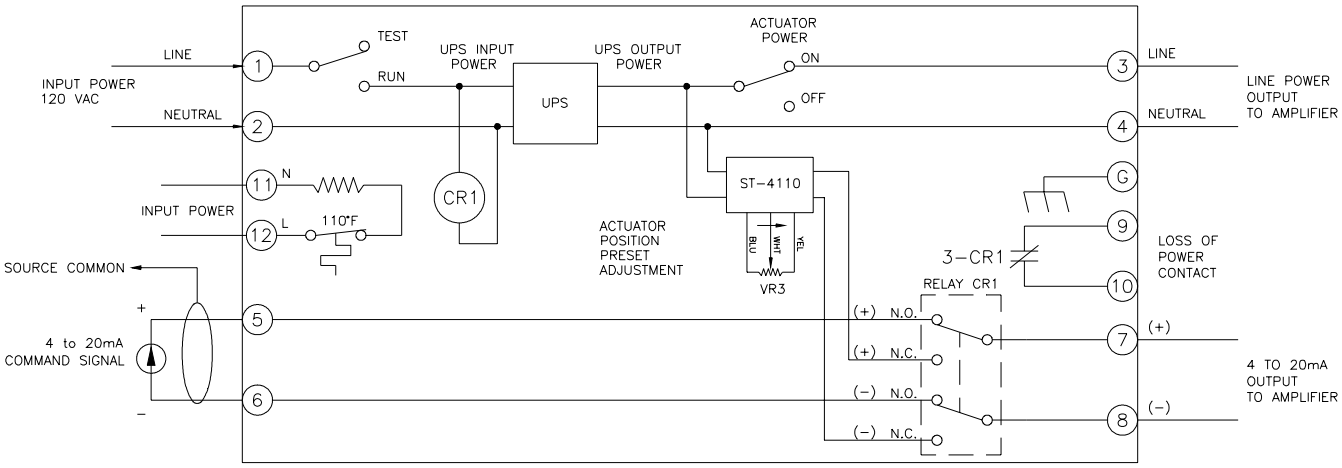
TYPICAL WIRING DIAGRAMS

4 TO 20 mA CONTROL SHUT DOWN OR CONTINUED OPERATION ON LOSS OF LINE POWER

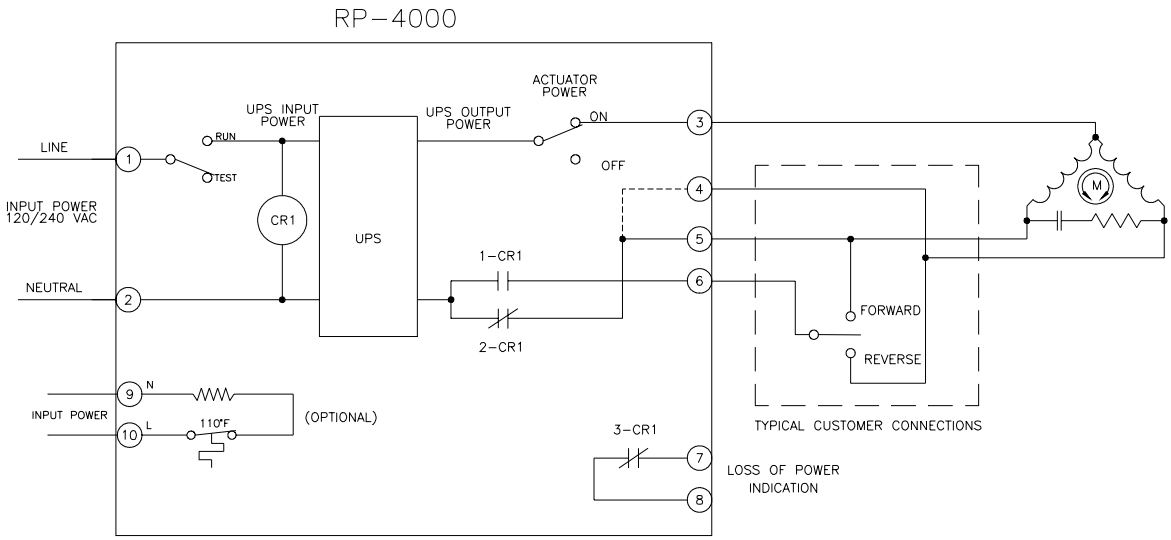


TYPICAL WIRING DIAGRAMS

4 TO 20 mA RUN TO PRESET ON LOSS OF LINE POWER



UPS FOR LOSS OF POWER RUN TO END OF TRAVEL POSITION



Due to wide variations in the terminal numbering of actuator products, actual wiring should follow the print supplied with the actuator.

START-UP

(Always follow supplied wiring diagram)

CHARGING OF BATTERY

1. Place ON /OFF switch in the OFF position.
2. Apply power to the input terminals of the RP-4000.
3. Allow battery to charge for 3 to 7 hours.

LOSS OF LINE POWER RUN TO END OF TRAVEL POSITION

(Always remove power when working on RP-4000)

1. Switch Actuator Power Switch to the OFF position.
2. Make all wiring connections to and from the RP-4000. Be sure to wire out Loss of Power indication, this to indicate loss of power.
3. Plug in cord that is near the battery of the RP-4000 in the back of the unit.
4. Apply power to the RP-4000
5. Switch Actuator Power Switch to the ON position. Be sure that the TEST / RUN switch is in the RUN position.
6. Cycle RP-4000 unit for normal operation to be sure all connections have been properly made. If unit does not cycle properly check wiring.

4-20MA CONTROL SHUT DOWN OR CONTINUED OPERATION ON LOSS OF LINE POWER

(Always remove power when working on RP-4000)

1. Switch Actuator Power Switch to the OFF position.
2. Make all wiring connections to and from the RP-4000. Be sure to wire out Loss of Power indication, this to indicate loss of power.
3. Plug in cord that is near the battery of the RP-4000 in the back of the unit.
4. Apply power and command signal to the RP-4000.
5. Switch Actuator Power Switch to the ON position. Be sure that the TEST / RUN switch is in the RUN position.
6. Cycle RP-4000 unit for normal operation to be sure all connections have been properly made. If unit does not cycle properly check wiring.

4-20MA RUN TO PRESET ON LOSS OF LINE POWER

(Always remove power when working on RP-4000)

1. Switch Actuator Power Switch to the OFF position.
2. Make all wiring connections to and from the RP-4000. Be sure to wire out Loss of Power indication, this to indicate loss of power.
3. Plug in cord that is near the battery of the RP-4000 in the back of the unit.
4. Apply power and command signal to the RP-4000.
5. Switch Actuator Power Switch to the ON position. Be sure that the TEST / RUN switch is in the RUN position.
6. Cycle RP-4000 unit for normal operation to be sure all connections have been properly made. If unit does not cycle properly check wiring.
7. Place TEST /RUN switch to the TEST position.
8. Calibrate ST-4100 by turning VR3 potentiometer for 4-20mA preset position for loss of power.
9. Return the TEST / RUN switch to the RUN position for normal operation.

See page 10 for component location diagram.

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Remedy
Actuator doesn't move on Loss of Power.	a. Actuator power switch is in the OFF position	a. Place Actuator power switch in the ON position
	b. Battery recharge light is ON	b. Recharge the battery
	c. Electric relay doesn't change states	c. Replace relay
	d. No output from the ST-4100 transmitter.	d. Replace ST-4100 Transmitter or replace potentiometer to the ST-4100
	e. Battery is dead.	e. Recharge battery.
Actuator doesn't run to 4-20mA set point or respond to command signal.	a. Electric relay doesn't change states	a. Replace relay
	b. No output from the ST-4100 transmitter.	b. Adjust ST-4100 Transmitter or adjust potentiometer to the ST-4100
Actuator simulates Loss of Power under normal operating conditions.	a. No line power to the RP-4000	a. Check line power to RP-4000
	b. Test / Run switch in the Test position	b. Place Test / Run switch in the Run position
	c. Electric relay doesn't change states	c. Replace relay

MAINTENANCE

REPLACEMENT OF BATTERY

Battery life is approximately 5 years. Replace battery every five years under normal operating conditions. To replace the battery:

1. Disconnect all power to and from the RP-4000.
2. Be sure to mark all wires removed so they can be returned after battery is replaced.
3. Remove all nuts and mounting hardware retaining the battery and remove battery.
4. Reverse above steps and replace battery.

REPLACEMENT OF ST-4100

1. Remove power to and from the RP-4000.
2. Be sure to mark all wires removed so they can be returned after ST-4100 is replaced.
3. Unscrew ST-4100 and disconnect (unsolder) wires from VR3 potentiometer.
4. Mount new ST-4100 and connect all wires back to original termination.
5. Place power back to the RP-4000 and recalibrate ST-4100 for loss of power position.

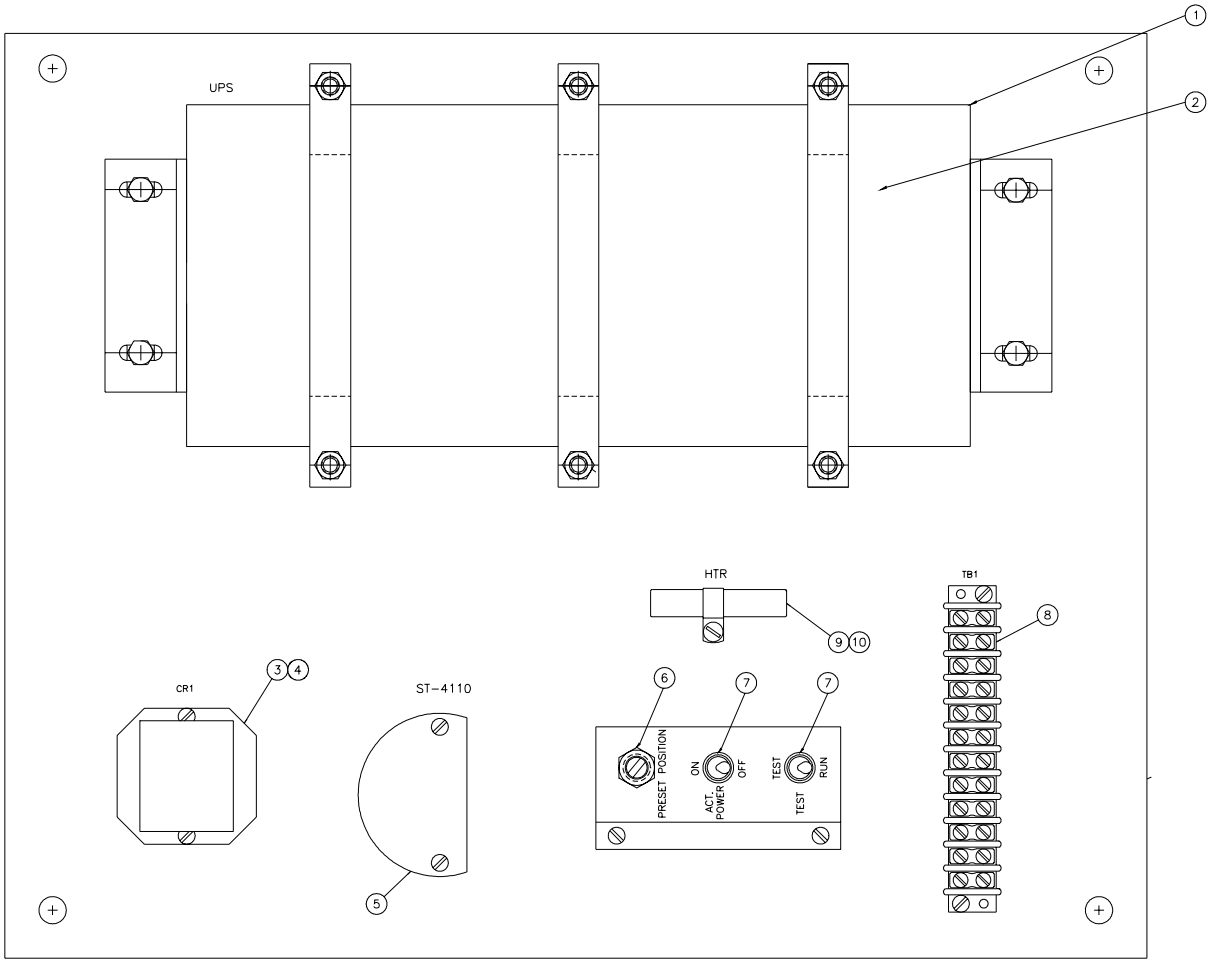
REPLACEMENT OF AC RELAY

1. Remove power to and from the RP-4000.
2. Remove relay and replace.
3. Place power back to the RP-4000.

REPLACEMENT OF POTENTIOMETER AND SWITCHES

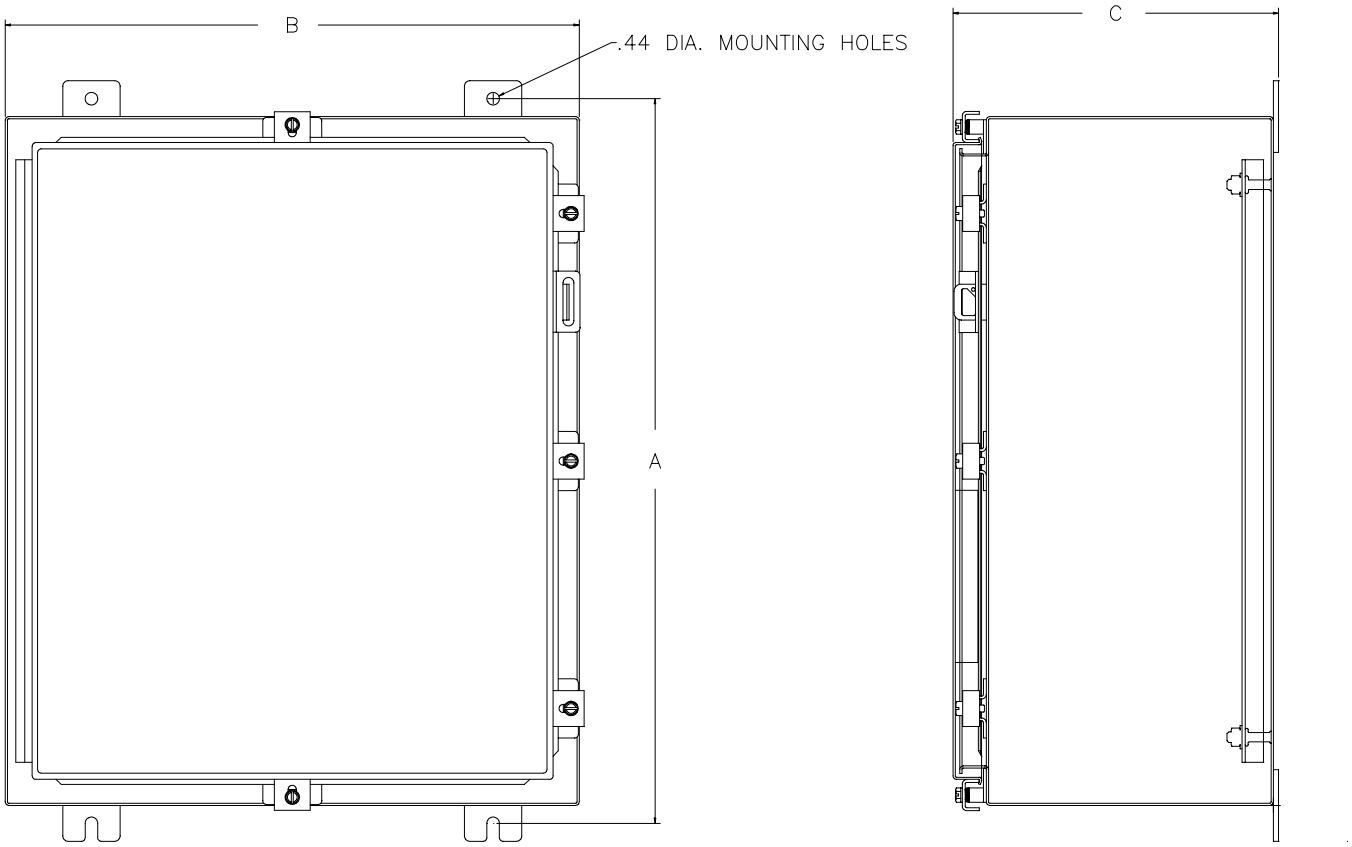
1. Remove power to and from the RP-4000.
2. Unscrew mounting plate for the switches and potentiometer.
3. Be sure to mark all wires removed so they can be returned after switch or potentiometer is replaced.
4. Remove defective item and replace.
5. Place power back to the RP-4000.
6. Recalibrate RP-4000 if potentiometer was replaced by putting RP-4000 TEST / RUN switch into TEST position and calibrate potentiometer VR3 for loss of power position.

SPARE PARTS LIST & LOCATION



Item	JCI#	Description	Series
1	74A-038456-001	UPS 120V, 750VA	RP-4010
1	74A-038456-002	UPS 120V, 1425VA	RP-4020
1	74A-038456-003	UPS 120V, 2250VA	RP-4030
1	74A-038846-001	UPS 230V, 750VA	RP-4010
1	74A-038846-002	UPS 230V, 1425VA	RP-4020
1	74A-038846-003	UPS 230V, 2250VA	RP-4030
2	74A-039094-001	120V, 750VA Battery	RP-4010
2	74A-039094-002	120V, 1425VA Battery	RP-4020
2	74A-039094-003	120V, 2250VA Battery	RP-4030
2	74A-039094-004	230V, 750VA Battery	RP-4010
2	74A-039094-005	230V, 1425VA Battery	RP-4020
2	74A-039094-006	230V, 2250VA Battery	RP-4030
3	27B-019623-006	Relay 120Vac, 3PDT	All
3	27B-019623-010	Relay 240Vac, 3PDT	All
4	28B-003776-020	Relay Socket	All
5	70A-024648-001	Trans 4-20mA, 120Vac	All
5	70A-024648-002	Trans 4-20mA, 240Vac	All
6	34B-100104-005	Pot 1K	All
7	46B-004053-316	Switch SPDT, 2 pos.	All
8	43B-003888-312	Barrier Terminal	All
9	74B-016946-001	Heater 120Vac	All
9	74A-016946-002	Heater 240Vac	All
10	74A-023565-001	Thermostat	All

MAJOR DIMENSIONS - ENCLOSURE



NOTE: Conduit openings are customer provided.

	A	B	C
RP-4010 RP-4020	24 in. (615 mm)	20 in. (513 mm)	10 in. (256 mm)
RP-4030	36 in. (923 mm)	30 in. (769 mm)	16 in. (410 mm)

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