Battery Back-Up Installation Manual:
Models SBBI-2

SBBI-2 Operating Information:
The SBBI-2 board allows the user to select the type of gate system it is used on with switching programming. For this description the term 'Single' means one gate control board with one OR two operators while 'Double' means a system with up to four operators running no more than two at a time. A two leaf entry gate and a two leaf exit gate would be considered a 'double'.

Items Included:

SBBI-2 Battery Back-Up with Enclosure
1250 Watt Tripp-Lite Voltage and Frequency Controlled Inverter (shipped separately)
Battery Charger/Maintainer
10 Foot Wiring Harness for:
- Power Output from Battery Back-Up to Device Control System
- Device Control Function Wiring – see note 1 at the top of page 2

2.5 Foot Lead-In Cables for Battery to Inverter Connection
100 Amp Fuse for Installation between Positive Battery Terminal and Inverter
Fuse Holder

Customer-supplied Items:

Battery (see page 3 for Selection Guidelines)
Battery Enclosure
Weather Resistant Enclosure Connectors
Commercial Power Input Wiring

Installation and Wiring Instructions

Inverter Installation:

1. Unpack inverter from its box.
2. Install inverter into enclosure below the shelf with the control panel facing you.
3. Install **green** ground wire from back of pre-wire to **silver** ground terminal on inverter.
4. Insert **red** (+) and **black** (-) 12VDC power leads from back of pre-wire into the positive and negative terminals of the battery.
5. Plug male inverter remote plug (RJ 45 plug) into receptacle on the face of the inverter.
6. Plug the three prong cord into the socket on the inverter.

NOTE: Leave inverters facing you until the battery is connected, and then turn the inverter so its control panel is facing the right side of the enclosure, facing the battery.

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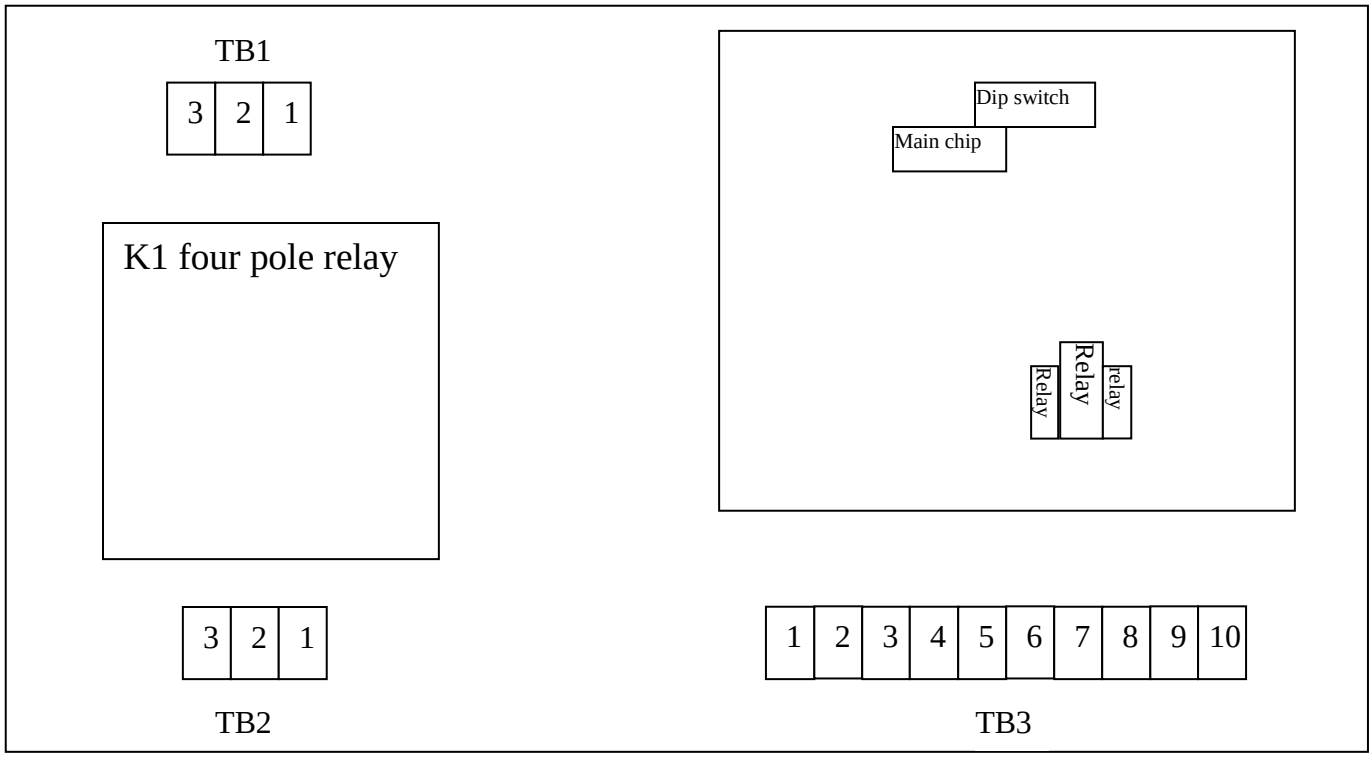

Device Control System Power:

Connect outgoing power to the gate control system to TB2 using included wiring (14/3 cord):

1. 115VAC Hot (Black)
2. 115VAC Neutral (White)
3. Earth Ground (Green)

Commercial Power

Connect in-coming 115VAC single phase commercial power to TB1:

1. 115VAC Hot (Black)
2. 115VAC Neutral (White)
3. Earth Ground (Green)

Device Control Functions:

Connect supplied function control wiring harness (18/6 cord) to TB3

1. Remote control device
2. Motor 1 open contact.
3. Motor 1 open common.
4. Motor 1 cycle common.
5. Motor 1 cycle contact.
6. Motor 2 cycle contact.
7. Motor 2 cycle common.
8. Motor 2 open common.
9. Motor 2 open contact.
10. NOT USED

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Battery Connections:

Connect black #4 cable from inverter to battery using supplied hardware:

1. Connect negative cable between negative terminal of inverter and negative terminal of the battery.
2. Connect positive cable between positive terminal of inverter and positive terminal of the battery with 100 amp fuse in line.

Multiple Batteries: For two or more batteries, batteries must be connected in ***parallel***, connecting batteries in series ***will*** result in damage to the power inverter.

1. Connect negative terminal of first battery to negative terminal of second battery.
2. Connect positive terminal of first battery to positive terminal of second battery.

NOTE: Batteries are shipped in a separate package. Fuse is already installed on positive battery cable.

CAUTION: Connect battery only after commercial power is connected and turned on to the device. Connecting battery before commercial power is turned on could result in device moving and possibly injuring persons or causing damage to property.

Battery Selection Guidelines

SBBI recommends 12VDC "Maintenance Free" (sealed) batteries without individual cell caps.
NOTE: Your distributor can supply a battery, at extra cost, if you request it.

Gate Operating Modes determine the battery capacity.

GATE OPEN at power fail	18 amp hour (minimum)	
GATE SECURE at power fail	1 Operator	2 Operators
20 Gate Cycles	26 amp hours	50 amp hours
40 Gate Cycles	50 amp hours	100 amp hours

NOTE: A cycle is defined as opening and closing of the gate. Above data requires fully charged battery and temperatures above freezing (32 degrees Fahrenheit). For other applications contact Byan Systems, Inc..

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SBBI-2 MODE SELECTION

ACTION WHEN POWER FAILS:

'Single' Gate System-

'Open' Mode:
Power failure is verified for about 10 seconds, inverter is started, gate(s) is commanded to open, after about 60 seconds inverter is stopped, and system waits for power restoration. After power is restoration, power is verified for about 10 seconds, a 'cycle' command is issued causing gates to operate to the closed position.

'Secure' Mode:
Power failure is verified for about 10 seconds, inverter is started and system waits for a power restoration. After power restoration, power is verified for about 10 seconds and inverter is stopped.

'Double' Gate System

'Open' Mode:
Power failure is verified for about 10 seconds, inverter is started, first gate(s) is commanded to open, after about 60 seconds second gate(s) is commanded to open, after 60 seconds inverter is stopped, and system waits for power restoration. After power restoration, power is verified for about 10 seconds, a 'cycle' command is issued causing gates to operate to the closed position.

DIP SWITCH SELECTION

Position 1:
Down- Selects 'single' gate system operation; SW 1 positions 2, 3, and 4 are active
Up- Selects 'double' gate system SW 1 positions 2, 3, and 4 are not active

Position 2:
Down- Selects 'open' mode as the action upon power failure
Up- Selects 'secure' mode as the action upon power failure

Position 3:
Down- Selects opening action when battery exhausted in 'secure' mode
Up- Selects remain 'secure' (closed) when battery exhausted

Position 4:
Down- Selects operation as defined by position 2 and 3 switches
Up- when 'secure' mode selected, inverter runs for about 2 minutes only when an external 12v signal is applied to terminal 1 of TB3

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Wiring Instructions
Byan Systems G2M Control Board ONLY

Commercial Power:

Connect incoming commercial power to TB1 using method described on page one of this manual.

Gate Control System:

Connect outgoing power to TB2 in the battery back-up using included wiring

1. 115VAC Hot (Black)
2. 115VAC Neutral (White)
3. Earth Ground (Green)

Connect outgoing power to the high voltage terminal block on the G2M control board **not** installed in a Byan Systems prewire.

1. 115VAC Neutral (White)
2. 115VAC Hot (Black)

Or the power-in terminal block (TB1) on the Byan Systems prewire.

2. 115VAC Hot (Black)
3. 115VAC Neutral (White)
4. Earth Ground (Green)

Gate Control Functions:

Connect supplied function control wiring harness to TB3 in a battery back-up to accessory terminals on the G2M control board not installed in a Byan Systems prewire.

SBBI TB3	G2M Accessory Terminals
1 Empty	Not Used
2 Black	18 master board
3 White	16 master board
4 Green/ jumper from 3	16 master board
5 Brown	19 master board
6 Red	19 slave board
7 Jumper from 8	16 slave board
8 Green	16 slave board
9 Blue	18 slave board
10 Empty	Not used

Control Function wiring may also be connected to corresponding terminal blocks on the Byan Systems prewire:

SBBI TB3	12x10 G2M TB3	20x16 G2M TB5	24x20 G2M TB5 & TB7
3,4 & 7,8	Green 23	Green 23	Green 23
2 & 9	Purple 24	Purple 24	Purple 24
5 & 6	Orange 25	Orange 25	Orange 25

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