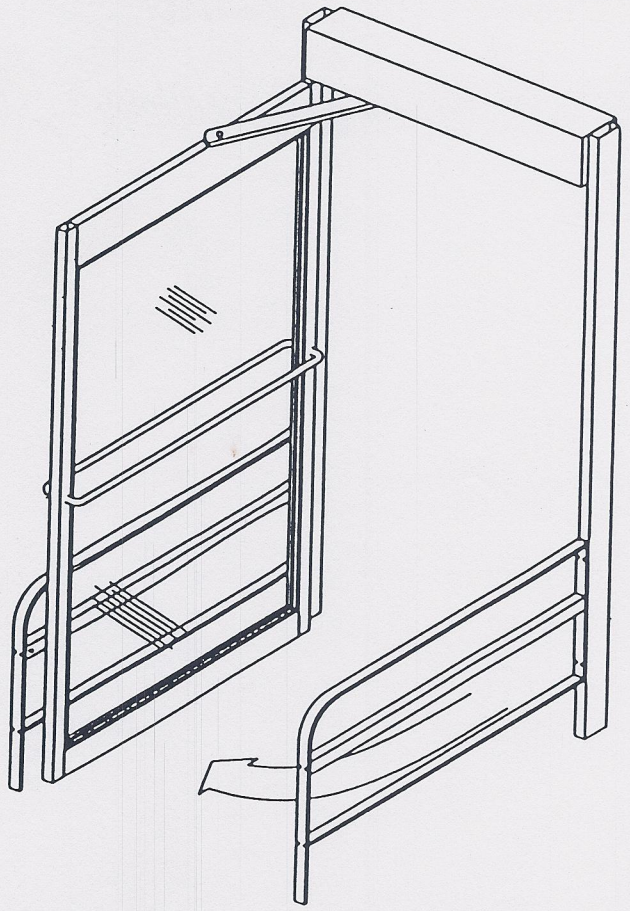
Microprocessor and Handy Terminal

Setup and Programming Manual

U11 Version



Swinging Door Systems

P/N 159318
March 6, 2000 Revision

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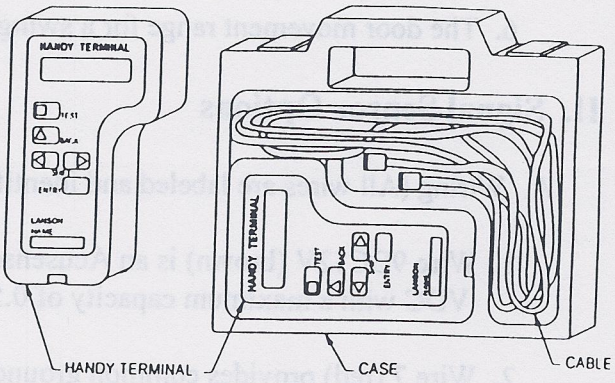
I. Product Introduction

A. The NABCO Entrances Microprocessor controller is on the leading edge of technology for automatic door operation and control. These units provide 20 operational functions with more than 150 different options. In addition, an auxiliary output signal is available to further customize door operation in accordance with applicable standards.

B. The companion Handy Terminal is used to make controller adjustments quick and easy. The Handy Terminal is powered directly from the Microprocessor, eliminating the need for batteries. (See Figure 1).



PART No. 148903

HANDY TERMINAL

Figure 1

NOTE: The microprocessor can be used with the Handy Terminal for sliding, swinging and folding door applications. Since there are some specific differences in set-up procedures, and operation for each type of door, consult the instruction manual for the unit being installed.

C. The Handy Terminal along with Microprocessor will do the following:

1. Count the number of times the Handy Terminal has been connected for service.
2. Count the number of opening and closing operations.

NOTE: The opening and closing counts are registered in increments of 100.

3. Count the number of times the door has recycled.

D. Microprocessor Controller Specifications

1. The required power source is 115 VAC +/-10 %, 50/60 Hz.
2. The power available from the controller for auxiliary equipment is 12 VDC 0.5 amps.

3. The recommended operating temperature range is -4° to 140° F (-20° to +60° Celsius). If the unit is sluggish, try warming the unit inside a jacket or warm building.

4. The maximum recommended door weight is 200 pounds, although this only a rough estimate because the operator forces are dependent not only on door weight but hinge friction and wind loads.

5. The hold open time delay range can be set up to 67 seconds.

6. The door movement range for a swinging door leaf is 0° to 120°.

II. Signal Sensor Options

A. Wiring (All wires are labeled and identified by color)

1. Wire 9DC12V (brown) is an Acusensor and Acugard power source. The output is 12 VDC with a maximum capacity of 0.5 amps.

2. Wire 7 (red) provides common ground for the 12 VDC power source.

3. Wire 61 (black) is the activation signal input and will open the door based on a signal from the Acusensor, mat or motion detectors.

4. Wire 6B (white) is for holding beams or swing side door mounted safety sensor

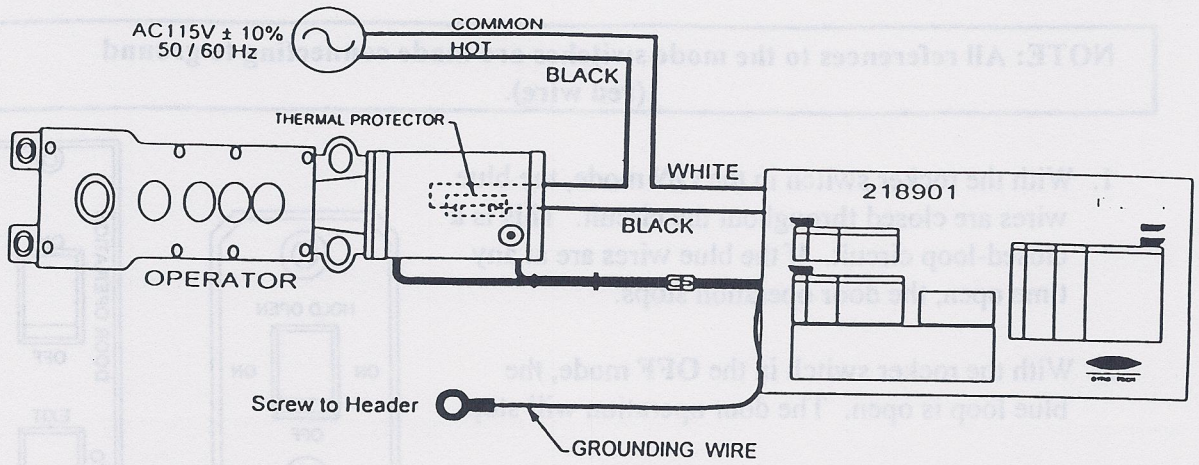
5. Wire H (green) is the safety mat signal and lockout for swing-side sensors.

6. Wire M0 (orange) is the mode input switch one (SW1), used to achieve different door functions (See Section II.B.).

7. Wire M1 (orange) is the mode input for switch two (SW2), which is used to achieve special functions (See Section II.B.), specifically the EXIT mode. If AUTO mode is selected, the control will instruct the lock to retract at all times. If EXIT mode is selected, the control will instruct the lock to retract only for interior activations.

8. Wire 62 (orange) is the exterior activation signal input.
In EXIT, it will reopen the door from any position except the fully open position.
When AUTO mode is selected, this wire works the same as Black 61.

NOTE: For Acugard systems, this input is for approach traffic.



Wire Diagram for Power and Grounding
Figure 2

9. Wire SQ (yellow) is for alternating door operation. Activate once to open and again to close the door. In the industry, it is sometimes referred to as sequential.

10. Wire BA (blue) will stop door operation if the door is broken or panicked open (when disconnected from wire 7 red). This feature should always be included on an in-swing door.

CAUTION: Do not unplug blue jumper-plugs when panic switches are not used. Unplugging these will stop the door's operation.

11. Wire OUT+ (violet) is the positive auxiliary output, used as a switch with a maximum rating of 24VDC and 50mA for an outside power source, it can supply 12 VDC and a maximum of 50mA of power.

12. Wire OUT- (gray) is the negative auxiliary output, rated to a maximum of 24 VDC and 50mA. This is the ground negative for output wire OUT+ (violet). CAUTION: This wire must be used with wire OUT+ (violet). Incorrect wiring will cause auxiliary signal output failure.

OUT+ and OUT- are limited in output current. Do not connect devices that exceed a total of 50 mA.

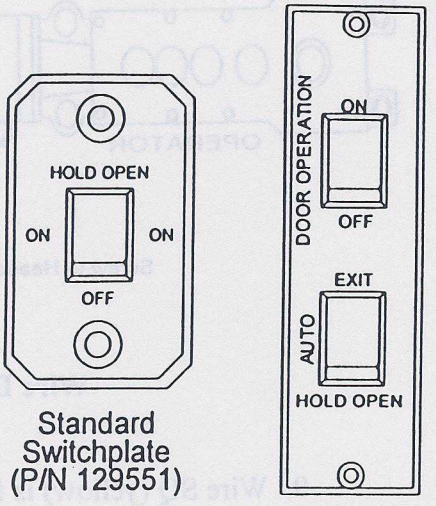
B. Modes

NOTE: All references to the mode switches are made connecting to ground (red wire).

1. With the rocker switch in the **ON** mode, the blue wires are closed throughout the circuit. This is a closed-loop circuit. If the blue wires are at any time open, the door operation stops.

2. With the rocker switch in the **OFF** mode, the blue loop is open. The door operation will stop.

3. The door is in **HOLD OPEN** mode when M0 and M1 are on. No activation is needed when this selection is made. See the Standard Switchplate in Figure 3.



Standard Switchplate (P/N 129551)

Optional Switchplate (P/N 219823)

Figure 3

4. **EXIT** mode allows activation to occur from only one side of the door. An electric lock remains locked unless an activation is received from the interior sensor. Electrically, M0 is on and M1 is off. (This feature requires an optional rocker switch. See the optional Switchplate in Figure 3). The door is in **AUTO** mode when both M0 and M1 are not connected to red wire #7.

C. Before turning on power....

1. Make sure all parts are wired properly including the 115 VAC. (See Figure 2).

2. Mode switch is set to "ON" (or "ON" and "AUTO" on the optional switchplate.)

3. The controller will be damaged if the power is switched on and off too quickly. After switching off the power, wait 10 seconds before switching it on.

4. Long term exposure to temperatures colder than - 4° Fahrenheit, without power should be avoided. Temperatures below -20° Fahrenheit may cause erratic behavior.

5. In the event of a power surge, which may cause a fuse failure, the fuse can be replaced. The power should be disconnected before removing the cover to replace the fuse. If the damage is more than fuse replacement, do not attempt to repair the Microprocessor.

III. Normal Setup and Programming Procedures

Note: The factory settings are reasonable, but not mandatory, for door operation. Each option should be reviewed carefully. Be sure the door is operating according to applicable ANSI controlling standards before releasing the entrance to the owner.

A. Microprocessor setup involves correct wiring of the unit followed by door operation setup, door stroke and speed settings.

The swing path must be clear of objects before the power for the sensors or controller(s) is turned on. Use the Handy Terminal to set up the controller. After the power is turned on, the Handy Terminal will act as a guide for set-up procedures and Microprocessor programming. There will be a series of displayed messages and a list of acceptable options.

1. Plug the Handy Terminal into the Microprocessor connector.

2. Turn on the power and note the direction of movement. The door should stay closed.

3. If the door opens slowly, it has been set up with the wrong hand (right hand units require handing harnesses). If this is the case, turn off the power and insert the handing harness (p/n 119208) between the Microprocessor and operator. Turn the power back on and note the direction of movement. The door should stay closed.

4. Choose an option by placing the cursor over the option and pressing the ENTRY button. Follow these four steps as prompted by Handy Terminal messages to initially set up the door.

   a. When the message reads SLIDE/SWING/STRK Y N, it is asking if you want to set the stroke on a sliding or swinging door. Move the cursor to the Y position and press the ENTRY button.

   b. When the message reads SWING DOOR Y, move the cursor to "Y" and press the ENTRY button.

   c. When the message reads PUSH TEST, press the TEST button. The Handy Terminal will provide the message ADJUSTING NOW JUST A MOMENT.

NOTE: The door should be moving slowly from closed to full open to closed position, measuring the stroke while it moves. Make sure there are no obstacles which would cause incorrect measurement.

d. When the unit has completed the initial setup, the message will read STD FUNCTION Y N. To see the door in action with the memorized settings, press TEST. The door will operate at the factory speeds and slow down at the latch check and back check points. After the test is completed, the display will again read "STD FUNCTION Y N".

This concludes the initial setup to factory settings. The Handy Terminal can be disconnected per the following section and the building owner instructed on the doors operation. However, there are a multitude of options available for the door's operation. Skip to Section V to learn about these options.

NOTE: The factory settings are reasonable, but not mandatory, for door operation. These settings are shown in the table on page 7. Each option should be reviewed carefully before releasing the entrance to the owner.

IV. Disconnecting the Handy Terminal

CAUTION: Failure to follow the disconnecting procedures may result in total loss of communication between the microprocessor and Handy Terminal.

A. The Handy Terminal can be disconnected after the last test has been completed and the display has been stabilized. This process normally takes a few seconds after the display indicates it is ready to accept new input from the Handy Terminal. After the time lapse, the Handy Terminal can be disconnected.

B. If power to the Microprocessor needs to be cut off, wait an additional 5 seconds after the Handy Terminal has been disconnected.

C. The door should now operate based on the pre-set settings shown in the following table. If changes are desired, go to Section V.

Factory Settings of Adjustable Functions Table

Adjustable Function	Factory Setting	Range
Standard Function Adjustments		
Opening Speed	3	0 - 7
Closing Speed	2	0 - 7
Time Delay	2	0 - 7
Feeling Adjustments		
Start Power	3	0 - 7
Check Power	6	0 - 7
Reaction Power	4	0 - 7
Back Check Speed	1	0 - 3
Latch Check Speed	1	0 - 3
Special Function Adjustments		
Hold Close	N	Yes or No
Signal at Closing	N	Yes or No
Signal at Full Open	N	Yes or No
Manual Opening	0	0 or 1 (Do not use 2 or 3)
Signal Slow	N	Yes or No
Recycle	Y	Yes or No
Recycle Sensitivity	1	0 - 3
After Recycle	Y	Yes or No
Auxiliary Output	0	0 - 3
Output Timer*	0	0 - 3
Extended Time Delay	7	0 - 7

* The output timer selection is required only when selecting 0 or 2 on the Auxiliary Output. This option will not appear if 1 or 3 has been selected for Auxiliary Output.

NOTE: Adjustments must be made if the door is not operating in accordance with applicable ANSI standards.

V. Adjustment Procedures

A. Standard Function Adjustments

1. Make sure the Handy Terminal is in the standard functions program located after normal setup. The message STD FUNCTION Y N will appear. Press entry to proceed to the next section or move the cursor to Y and press entry to start the Standard Functions program.

2. There are three categories of standard functions

   - **Opening Speed** - The message will read OPEN SPEED 3. Eight speeds are available from 0 to 7. Seven is the fastest.

NOTE: Set all door speeds to comply with ANSI standards.

   - **Closing Speed** - The message will read CLOSE SPEED 2. Eight speeds are available from 0 to 7. Seven is the fastest..

   - **Time Delay** - The message TIME DELAY 2 will appear. This determines the number of seconds the door will stay open after both the activating and safety signals are cleared. Eight options are offered with time delays of 0 to 7 seconds. Longer time delays are possible through Special Function adjustments.

B. Feeling Adjustments

1. The message FEELING ADJUST? Y N will appear. Press entry to proceed to the next section or move the cursor to Y and press entry to start the Feeling Adjustments program.

2. There are five available feeling adjustments:

   - **Start Power** - The message will read START POWER 3. This is the power used to accelerate the door at the start of the opening and closing cycles. Eight options are offered. Option 0 provides the slowest acceleration. Higher settings should be used on heavier doors or where high speed operation for opening are desired.

   - **Check Power** - The message will read CHECK POWER 6. This adjusts braking power to reduce door speed to the check or latch speed. Eight options are offered. Zero provides gradual braking, and 7 provides abrupt braking.

SIG. AT CLOSING Y SIG. FULL OPEN Y.

Settings required for a floor mat and safety beam system

See the Door Functions Table on the next two pages for additional info on Signal at Open / Closing

- **Manual Open** - The message will read: MANUAL OPEN 3.
  After the unit has been completely set up and is operating, a choice is offered on how the door will act if manually opened. This may occur because the activating device was not used or did not operate properly. There are four options:
  0 - The door will close slowly by motor power.
  1 - Opening the door manually from a closed position will activate the door to power open. Not a push-to-go, but push-to-start since continued pushing may cause a recycle.

Do not use 2 or 3. These settings are for a folding door. Inadvertently setting this to 2 or 3 will cause the door to malfunction.

- **Signal Slow** - The message will read: SIGNAL SLOW N.
  Choose Y and the door slows down when 6B (white) is signaled during an opening cycle. Choose N and the door stops when signaled. After the signal runs out, the door opens or closes slowly. (See Door Functions Table for details).

- **Recycle** - The message will read: RECYCLE? Y.
  This adjustment determines what the door will do if it encounters an obstacle during the closing cycle. Choose Y and the door opens, choose N and the door stops and remain in that position until the next activating signal. The operation when the door reaches full open position is governed by "After Recycle".

- **Recycle Sensitivity** -The message will read: RECYCLE SENS. 1.
  It adjusts the sensitivity of force causing the door to recycle. Four options: 0 is softest, 3 is hardest.

- **After Recycle** - The message will read: AFTER RECYCLE Y.
  This adjusts for operation after the door reaches the full open position caused by the recycle. Choose Y and the door will close after the time delay expires. Choose N and door stays in the open position; it will take another activating signal for it to time out and close.

- **Reaction power** - The message will read REACTION POWER 4. It controls how fast the door will react to an activating signal (i.e., how long it takes the closing door to reverse direction. Eight options are offered. Zero (0) provides the slowest reaction, 7 the fastest.

- **Back Check Speed** - The message will read BACK C. SPEED 1. This is the speed of the door just before the fully open position. Four speeds are offered. The 0 is the slowest speed and 3 is the fastest.

- **Latch Check Speed** - The message will read LATCH C. SPEED 1. This is the speed of the door just before the fully closed position. Four speeds are offered. The 0 is the slowest speed and 3 is the fastest.

C. Special Function Adjustments

1. The message will read: SPECIAL FUNCTION Y N. Press entry to proceed to the next section or move the cursor to Y and press entry to start Special Functions.

2. There are 10 adjustments:
   - **Using Motor Power to hold the door closed**
     The message will read HOLD CLOSE N.
     When using the motor the spring force assists to keep the door closed. Option N closes the door only with spring force.

NOTE: Spring force may not be enough to keep the door closed in windy conditions.

   - **Door Operation with Safety Signal while door is closing**
     The message will read: SIG. AT CLOSING N.
   - **Door Operation with Safety Signal while door is open**
     The message will read: SIG. FULL OPEN N.

A combination of the two settings allows for 4 types of safety systems:

SIG. AT CLOSING N SIG. FULL OPEN N.
For Acugard, with the sensors active during backcheck

SIG. AT CLOSING Y SIG. FULL OPEN N.
For Acugard, with the sensors deactivated during backcheck. This is useful when guide rails or an abutting wall needs to be ignored. These settings may eliminate the need for retrofitting microswitches on the operator. The disabling angle is non-adjustable.

SIG. AT CLOSING N SIG. FULL OPEN Y.
Settings required for an Acurail system.

Door Functions for
Signal at Full Open and Signal at Closing

Acugard System (Full Detection)
SIG. AT CLOSING: N SIG. FULL OPEN: N

Wiring: Acugard (Swing Side) - 6B White Acugard (Approach Side) - 61 Black
Acusensor (Swing Side) - H Green Activation Device (Swing Side) - 62 Orange

The door is currently:	What occurs with the door when the swing side *Acugard* detects objects:	What occurs with the door when the swing side *Acusensor* detects objects:
Closed	The door will remain closed regardless of an activation signal	The door will remain closed regardless of an activation signal
Opening	The door will either stop or slow down depending on the SIGNAL SLOW setting. If SIGNAL SLOW is N, the door will stop and remain fixed until the signal is clear. After clearing the door will continue to open at slow speed. If SIGNAL SLOW is Y, the door will slow and continue to open at this slow speed.	N/A
Fully Open	N/A	The door stays open
Closing	N/A	N/A

Acugard System (No Detection during back check)
SIG. AT CLOSING: Y SIG. FULL OPEN: N

Wiring: Acugard (Swing Side) - 6B White Acugard (Approach Side) - 61 Black
Acusensor (Swing Side) - H Green Activation Device (Swing Side) - 62 Orange

The door is currently:	What occurs with the door when the swing side *Acugard* detects objects:	What occurs with the door when the swing side *Acusensor* detects objects:
Closed	The door will remain closed regardless of an activation signal	The door will remain closed regardless of an activation signal
Opening	When the door is in back check, it will continue to open. Otherwise, the door will either stop or slow down depending on the SIGNAL SLOW setting. If SIGNAL SLOW is N, the door will stop and remain fixed until the signal is clear. After clearing the door will continue to open at slow speed. If SIGNAL SLOW is Y, the door will slow and continue to open at this slow speed.	N/A
Fully Open	N/A	The door stays open
Closing	N/A	N/A

Door Functions for
Signal at Full Open and Signal at Closing (*Continued*)

Acurail System

SIG. AT CLOSING: N SIG. FULL OPEN: Y

Wiring: Safety Beam - 6B White
Acusensor (Swing Side) - H Green
Acusensor (Approach Side) - 61 Black
Acusensor (Swing Side) - 62 Orange

The door is currently:	What occurs with the door when the safety beam is interrupted:	What occurs with the door when the swing side *Acusensor* detects objects:
Closed	The door will remain closed regardless of an activation signal	The door will remain closed regardless of an activation signal
Opening	The door will either stop or slow down depending on the SIGNAL SLOW setting. If SIGNAL SLOW is N, the door will stop and remain fixed until the signal is clear. After clearing the door will slowly close *unless* an activation signal is present. If this is the case, the door will open at slow speed. If SIGNAL SLOW is Y, the door will slow and continue to open at this slow speed.	N/A
Fully Open	The door stays open	The door stays open
Closing	N/A	N/A

Floor Mat & Safety Beam System

SIG. AT CLOSING: Y SIG. FULL OPEN: Y

Wiring: Safety Beam - 6B White
Floor Mat (Swing Side) - H Green
Activation Device (Approach Side) - 61 Black
Activation Device (Swing Side) - 62 Orange

The door is currently:	What occurs with the door when the safety beam is interrupted:	What occurs with the door when the swing side floor mat is activated:
Closed	The door will remain closed regardless of an activation signal	The door will remain closed regardless of an activation signal
Opening	The door will either stop or slow down depending on the SIGNAL SLOW setting. If SIGNAL SLOW is N, the door will stop and remain fixed until the signal is clear. After clearing the door will slowly close *unless* an activation signal is present. If this is the case, the door will open at slow speed. If SIGNAL SLOW is Y, the door will slow and continue to open at this slow speed.	N/A
Fully Open	The door stays open	The door stays open
Closing	N/A	The door can not re-open by an activation signal

♦ **Auxiliary Output** - The message will read: AUX. OUTPUT 0. This will determine when a signal (from wires OUT+ and OUT-) is sent for the operation of an electric lock, another controller, relay or other device. There are four options:

0 - The electric lock option enables operation of the electric lock and time delay between release of the lock and door movement. The message will read: OUTPUT TIMER 0.

Note: The time delay selected for the lock release will also be used as the time delay to set the lock after arriving at closed position.

This option has several sub options should be selected from four options:

- 0 - ¼ second
- 1 - ½ second
- 2 - 3/4 second
- 3 - 1 second

1 - The air lock option will instruct the Microprocessor to prevent the second door from opening until the first door is closed, in a passageway situation. The microprocessors need to be connected with a custom built harness. Contact NABCO Engineering for details.

2 - The sequential door operation option requires selecting the time delay between the first and second door operations. The message will read: Output Timer - 0. Four sub options are offered:

- 0 - Two seconds
- 1 - Four seconds
- 2 - Six seconds
- 3 - Eight seconds

3 - Not **used.**

♦ **Extended Time Delay - The message reads: EXT. TIME DELAY 7.** It enables an extended time delay beyond the zero to seven seconds standard. Time delay is measured after the loss of the activation signal.

0- The standard 0 to 7 second delay

1 - 10 seconds longer than standard (10-17 seconds)

2 - 20 seconds longer (20-27 seconds)

3 - 30 seconds longer (30-37 seconds)

4 - 40 seconds longer (40-47 seconds)

5 - 50 seconds longer (50 - 57 seconds)

6 - 60 seconds longer (60 - 67 seconds)

7 - The door will open to the full open point before closing even if the time delay has expired during the opening cycle. The standard time delay of 0 to 7 seconds applies after the door reaches the open position.

♦ **History Data** - The message will read: HISTORY DATA Y N?. Press entry to proceed to complete the programming or move the cursor to Y and press entry to review the History Data.
- MAINTENANCE CNT: Indicates the number of times a handy terminal has been connected to the unit. The counter will record up to 255 connections.
- OPERATION CNT: Indicates the number of full door operations. It is updated every 100 door cycles. The counter will display up to 6,502,500 cycles.
- RECYCLE CNT: Indicates the number of times the door reversed direction after sensing an object was struck or the amount of friction surpassed the recycle sensitivity setting. The counter will display up to 255 recycles.

A flow chart can be found at the back of the manual identifying the path to all of the functions and setting choices.

VI. Troubleshooting

A. *The door is recycling on its own.*

1. Check if the Acusensors are sensing (seeing) something causing reactivation.

2. With the rocker switch selected to STOP mode, be sure that the door moves freely open and closed without obstructions or binding.

B. *There was a power failure.*

1. A power failure lasting less than one second will not affect operation.

2. A power failure of one second or more will cause the Microprocessor to brake the door fully. The door will stop in the position it's at when the power failed and close slowly under spring return.

3. When the power is reapplied, settings programmed into the microprocessor remain in effect. It is ready for operation.

C. *There was trouble detected by the controller.*

1. For the following problems, the door will stop operating and the Microprocessor will memorize the nature of the trouble. The Handy Terminal must be used to clear the problem. When the Handy Terminal is connected, there will be a message:

   Error Check Y - N

   Choose Y to clear

   I. The message may read: **STROKE ERROR**. This means the microprocessor has sensed movement longer than the adjusted stroke or the motors' encoder has an failed. Check the motor coupler for tightness and readjust the door stroke. If re-stroke fails, replace the motor.

   II. The message may read: **RAM ERROR Y - N**. Select Y, Entry, to clear error message. Try normal operation. If operation fails, the Microprocessor needs to be replaced.

   III. The message may read: **EEPROM ERROR Y- N**. The unit can't read or write data. Select Y, Entry, to clear error message. Try normal operation. If operation fails, the Microprocessor needs to be replaced.

C. *There was trouble detected by the controller* (Continued)

2. If the Microprocessor does not operate at all, check the wiring, connections, and activation devices. Connect the Handy Terminal for an error message, clear and repair. Check the power supply, fuse and motor wiring/encoder, or change out the motor. The final option would be to change the Microprocessor.

D. *There are problems with the general door operation.*

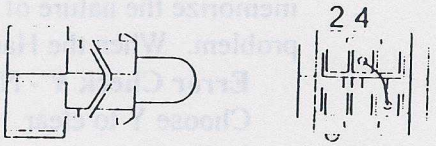
1. If the door does not open at all, check the sensor wiring, actuating sensor, and breakout circuitry if so equipped. Connect the Handy Terminal and try TEST key.

2. On a new installation, if there is abnormal door operation, the motor wiring may need to be reversed. Check or reset the stroke and install the handing harness where needed. Check the Handy Terminal settings. Note: The settings may not have been received by the Microprocessor or the door may have been set up as a slider instead of a swinger. Reprogram the Microprocessor by starting over at the beginning of Section III.

3. In some cases, resetting the microprocessor may solve some erratic or unusual operations. As a "last resort", follow the procedures on page 18 to reset the controller.

E. *Handy Terminal message. GYRO TECH HANDY TERMINAL does not change.*

1. Check if you have the mode switch installed and set to ON position. If a mode switch is not used be sure the jumper for the mode switch is in place.

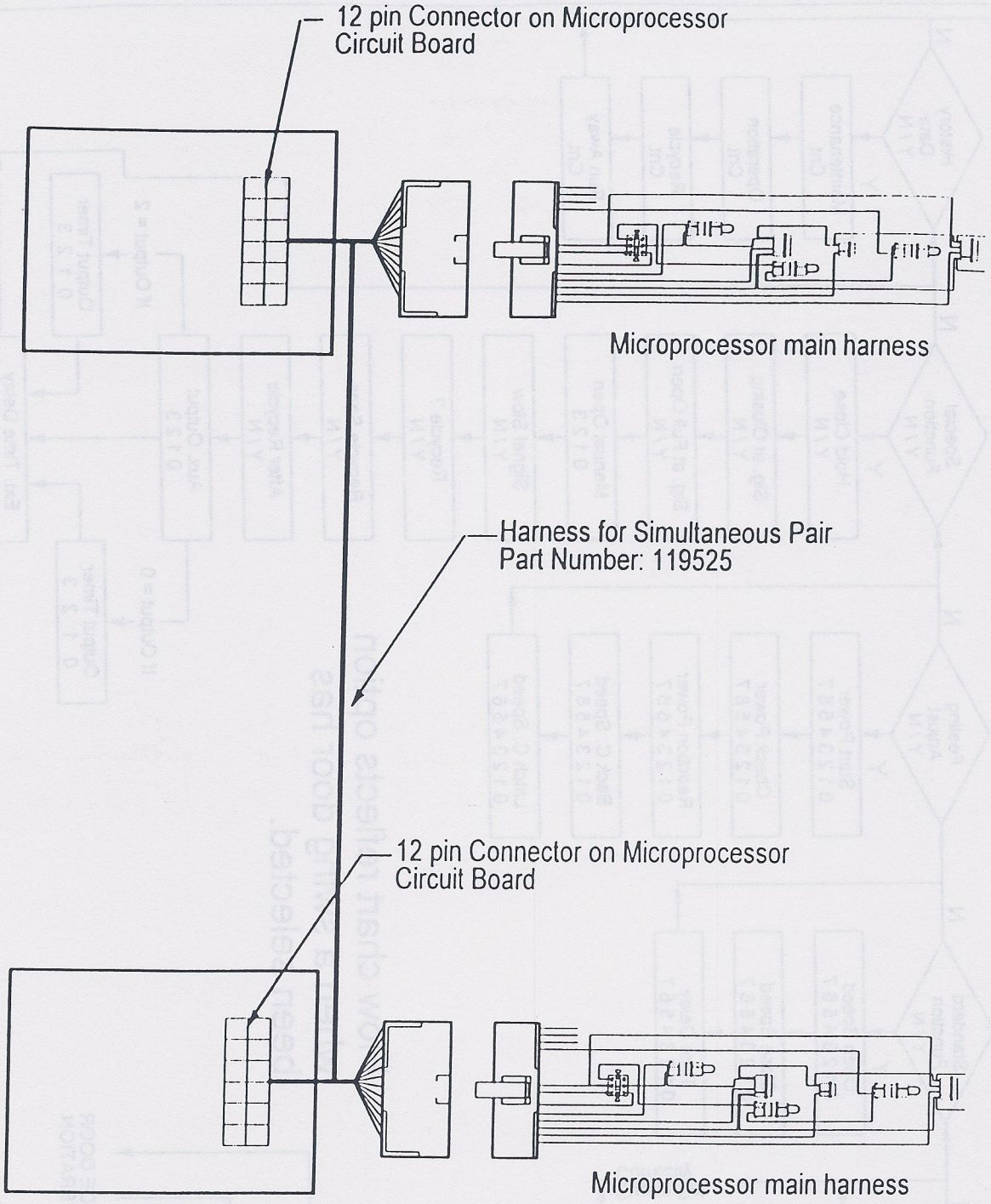


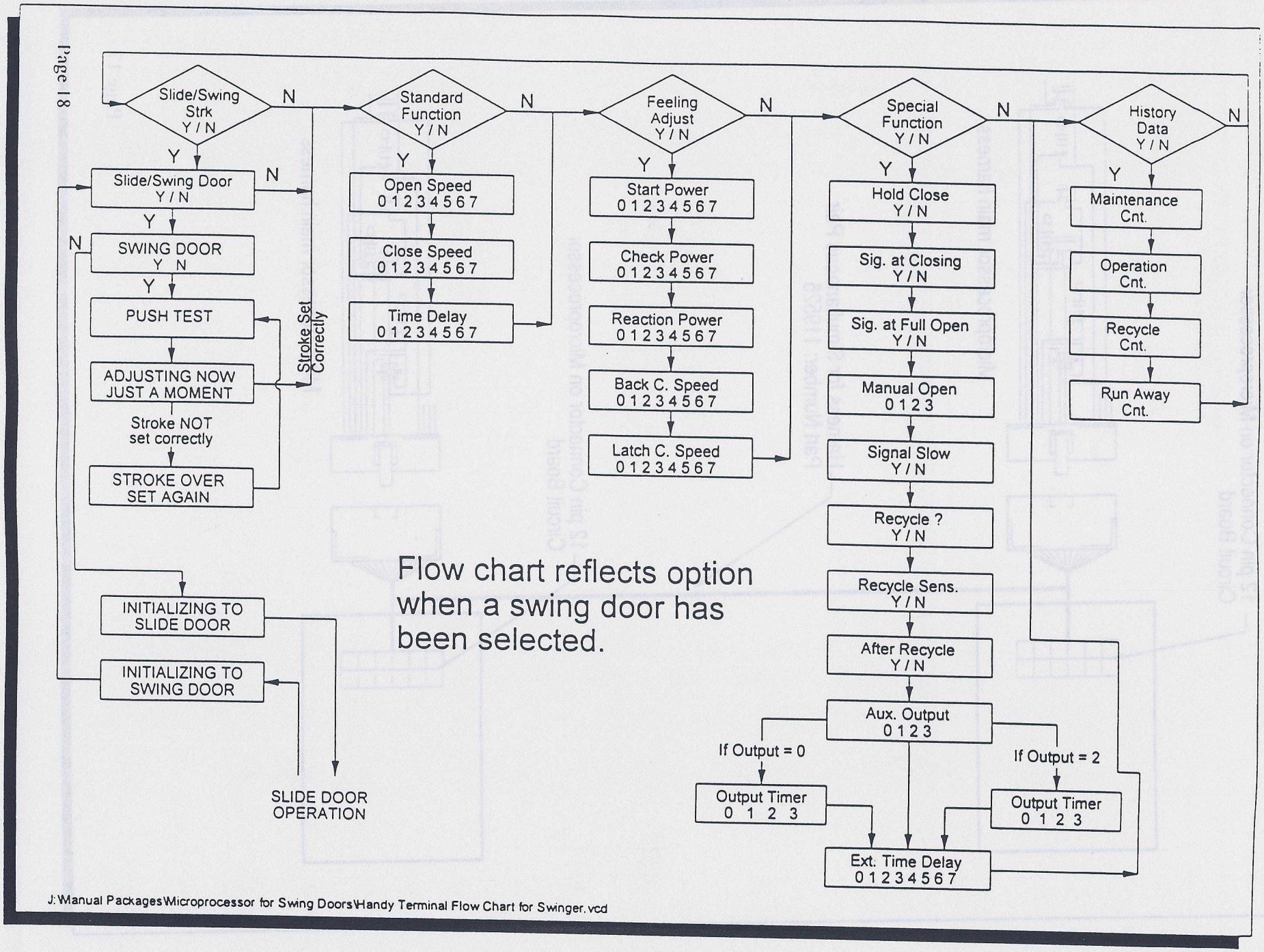
119826 Jumper Plug

2. Check the normally closed (N.C.) panic switch for correct operation. Normally closed when the door is in normal operation. If there is no panic used, ensure the jumpers are installed in place of the panic switch. It is a BLUE jumper plug used in three locations on the harness. There should be one plug for each position.

VII. Installation of Simultaneous Harness:

Open both microprocessors. Remove the main harness from the circuit board by unplugging the connector. Once removed, install the simultaneous-pair harness in place of the main harness. This harness will snap into place where the old harness was removed from. Repeat the step for the second controller. The simultaneous-pair harness has inputs for the main harness to reconnect into. Now both controls are tied together. If an activation occurs on one harness, it will activate both controls. Using one mode switch to operate both controls is adequate. A jumper must be installed into the opposing mode switch input. The part number for the jumper plug is 119826.


12 pin Connector on Microprocessor Circuit Board
Microprocessor main harness
Harness for Simultaneous Pair Part Number: 119525
12 pin Connector on Microprocessor Circuit Board
Microprocessor main harness



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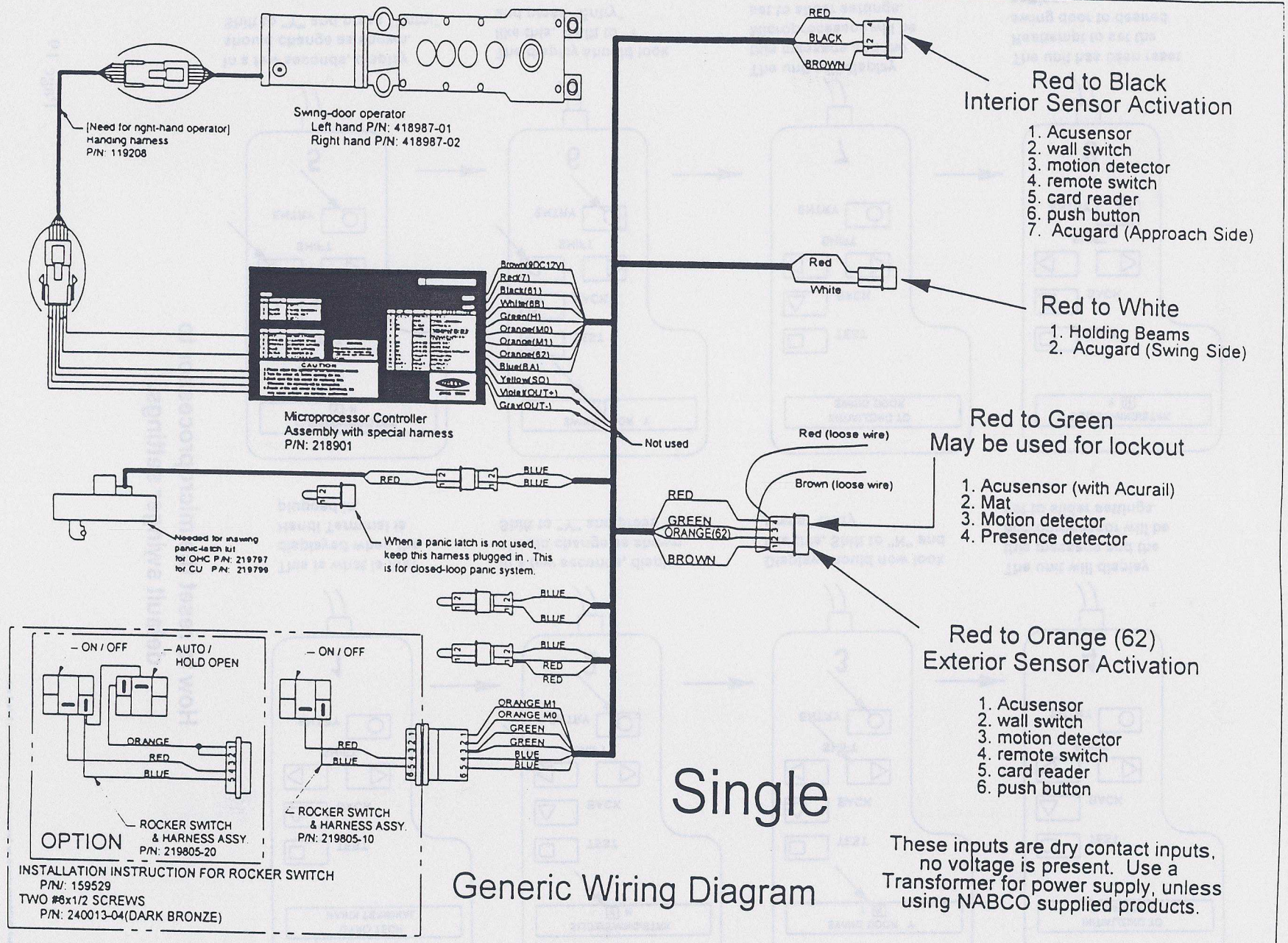
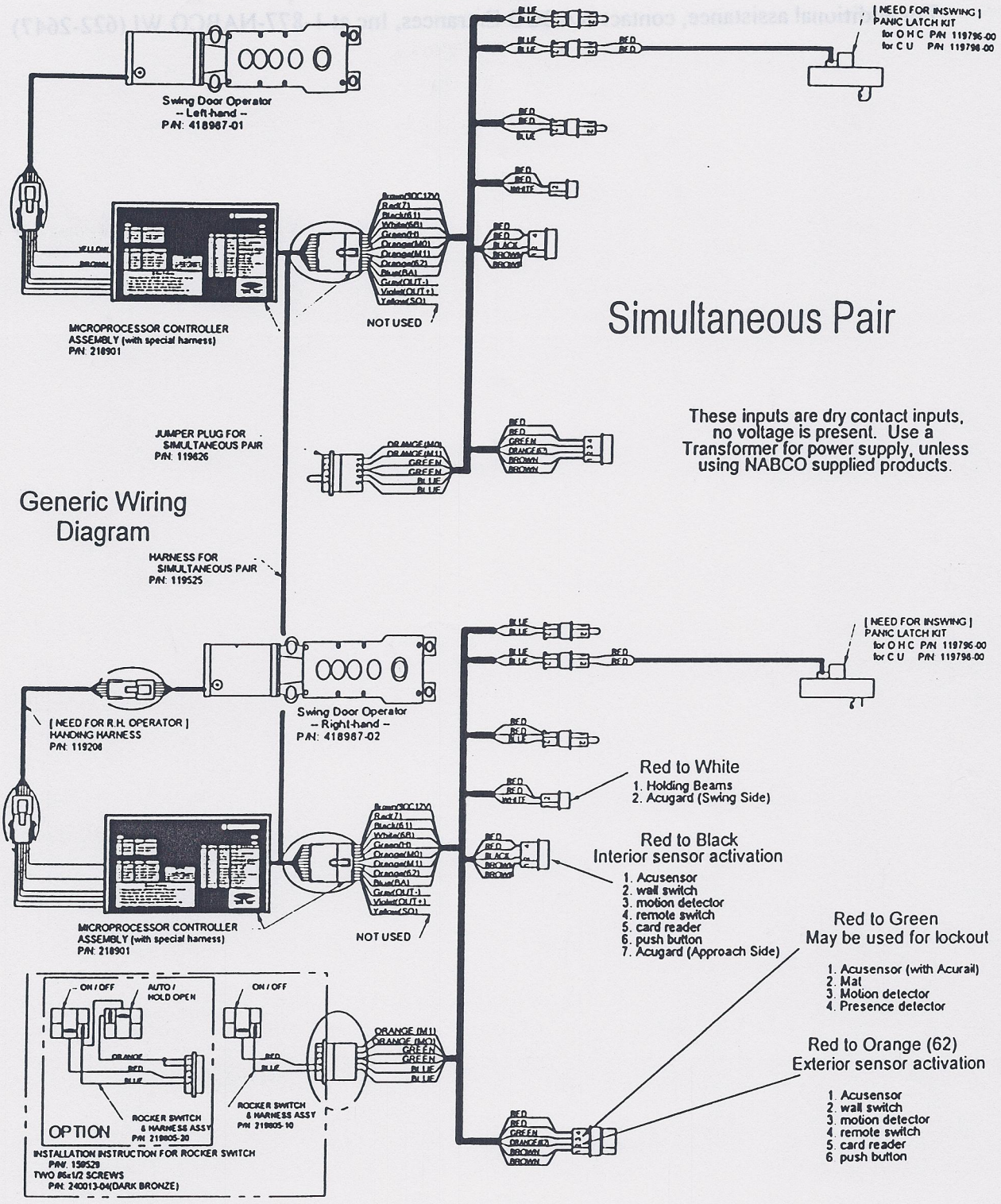
How to reset the microprocessor to default swinger settings.


Swing-door operator
Left hand P/N: 418987-01
Right hand P/N: 418987-02
[Need for right-hand operator]
Handing harness
P/N: 119208
Microprocessor Controller
Assembly with special harness
P/N: 218901
Brown(90C12V)
Red(7)
Black(61)
White(6B)
Green(H)
Orange(M0)
Orange(M1)
Orange(62)
Blue(BA)
Yellow(SO)
Violet(OUT+)
Gray(OUT-)
Not used
RED
BLACK
BROWN
Red to Black
Interior Sensor Activation
1. Acusensor
2. wall switch
3. motion detector
4. remote switch
5. card reader
6. push button
7. Acugard (Approach Side)
Red
White
Red to White
1. Holding Beams
2. Acugard (Swing Side)
Red (loose wire)
Brown (loose wire)
RED
GREEN
ORANGE(62)
BROWN
Red to Green
May be used for lockout
1. Acusensor (with Acurail)
2. Mat
3. Motion detector
4. Presence detector
Red to Orange (62)
Exterior Sensor Activation
1. Acusensor
2. wall switch
3. motion detector
4. remote switch
5. card reader
6. push button
RED
BLUE
Needed for in-swing panic-latch kit
for OHC P/N: 219797
for CU P/N: 219799
When a panic latch is not used, keep this harness plugged in . This is for closed-loop panic system.
BLUE
BLUE
BLUE
RED
RED
ORANGE M1
ORANGE M0
GREEN
GREEN
BLUE
BLUE
– ON / OFF
– AUTO / HOLD OPEN
ORANGE
RED
BLUE
OPTION
ROCKER SWITCH & HARNESS ASSY. P/N: 219805-20
– ON / OFF
RED
BLUE
ROCKER SWITCH & HARNESS ASSY. P/N: 219805-10
INSTALLATION INSTRUCTION FOR ROCKER SWITCH
P/N: 159529
TWO #8x1/2 SCREWS
P/N: 240013-04(DARK BRONZE)
Single
Generic Wiring Diagram
These inputs are dry contact inputs, no voltage is present. Use a Transformer for power supply, unless using NABCO supplied products.


Swing Door Operator
-- Left-hand --
P/N: 418987-01
[NEED FOR INSWING]
PANIC LATCH KIT
for O H C P/N 119796-00
for C U P/N 119796-00
MICROPROCESSOR CONTROLLER
ASSEMBLY (with special harness)
P/N: 218901
NOT USED
Simultaneous Pair
These inputs are dry contact inputs, no voltage is present. Use a Transformer for power supply, unless using NABCO supplied products.
JUMPER PLUG FOR
SIMULTANEOUS PAIR
P/N: 119426
Generic Wiring Diagram
HARNESS FOR
SIMULTANEOUS PAIR
P/N: 119525
[NEED FOR R.H. OPERATOR]
HANDING HARNESS
P/N: 119206
Swing Door Operator
-- Right-hand --
P/N: 418987-02
[NEED FOR INSWING]
PANIC LATCH KIT
for O H C P/N 119796-00
for C U P/N 119796-00
Red to White
1. Holding Beams
2. Acugard (Swing Side)
Red to Black
Interior sensor activation
1. Acusensor
2. wall switch
3. motion detector
4. remote switch
5. card reader
6. push button
7. Acugard (Approach Side)
Red to Green
May be used for lockout
1. Acusensor (with Acurail)
2. Mat
3. Motion detector
4. Presence detector
Red to Orange (62)
Exterior sensor activation
1. Acusensor
2. wall switch
3. motion detector
4. remote switch
5. card reader
6. push button
MICROPROCESSOR CONTROLLER
ASSEMBLY (with special harness)
P/N: 218901
NOT USED
- ON / OFF
AUTO / HOLD OPEN
ON / OFF
ROCKER SWITCH & HARNESS ASSY P/N 219805-20
ROCKER SWITCH & HARNESS ASSY P/N 219805-10
OPTION
INSTALLATION INSTRUCTION FOR ROCKER SWITCH P/N: 159529
TWO #6x1/2 SCREWS
P/N: 240013-04(DARK BRONZE)

Notes

For additional assistance, contact NABCO Entrances, Inc at 1-877-NABCO WI (622-2647)