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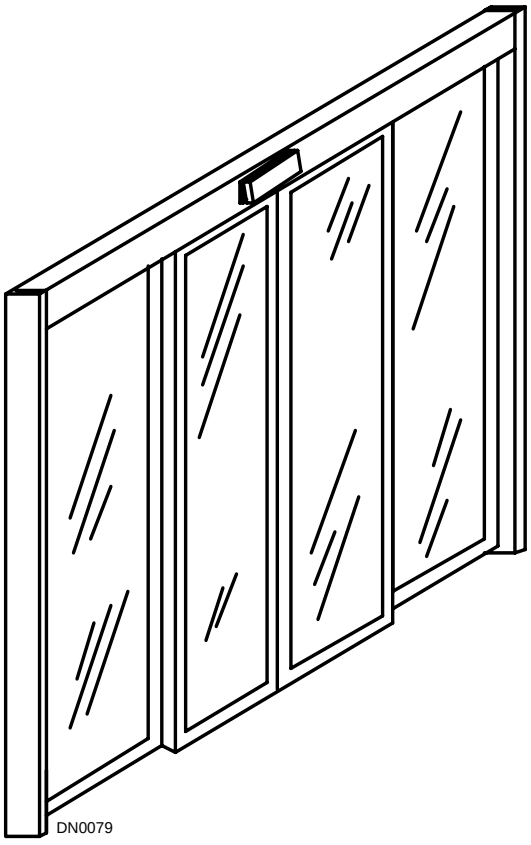
U30 Controller
Setup and Programming Manual



for
Sliding Door
Systems ONLY

P/N 15-9000-30
Revision 04-24-08

Table Of Contents

A. Product Introduction

A.1 Controller Functions: The NABCO ENTRANCES, Inc. U30 controller is leading edge technology for automatic door operation and control. This control provide 24 different operational functions with more than 112 different options. In addition, an auxiliary output signal is available to further customize door operation in accordance with applicable standards.

A.2 Handy Terminal: The companion Handy Terminal is used to make quick and easy controller adjustments. It connects directly to the Controller, eliminating the need for batteries. The unit is light, compact, and easy to hold with one hand (See Figure 1).

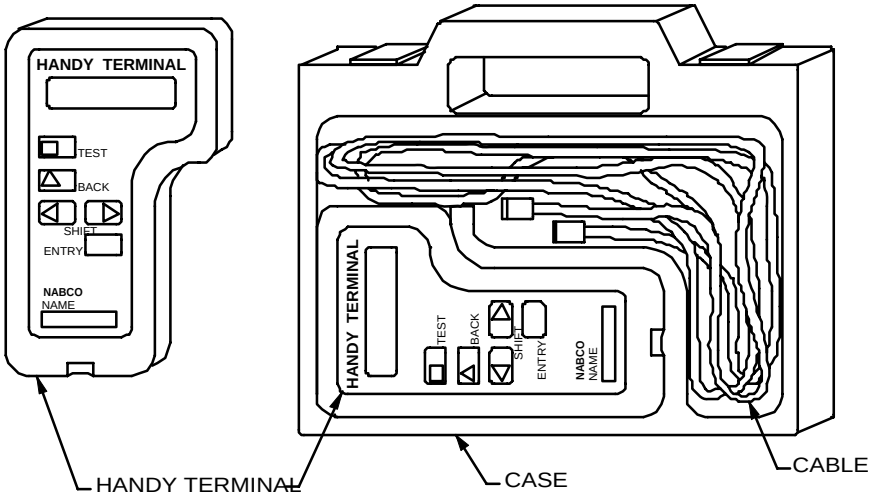


Figure 1

PART No. 148903

DN 0263 HANDY TERMINAL

A.3 Software Management: To aid in the door's management, the Controller will do the following:

A.3.1 History Data: Maintain data under the history data program.
Refer to section D.4 for more information.

A.3.2 Connection Count: Count the number of times the Handy Terminal has been connected for service and tracking.

A.3.3 Operation Count: Count the number of opening and closing operations.

> **NOTE**: The operation counts are registered in increments of 100 per power-on period.

A.3.4 Recycle Count: Count the number of times the door has recycled.

> **NOTE**: The U30 Controller **cannot** be used swing or folding door applications. Since there are some specific differences in set-up procedures and operation, consult the instruction manual for the unit being installed.

A.4 U30 controller specifications (See next page for Wire Designations)

Part description & (Circuit Designations)	**U30 Controller**
Part number	24-8901-30
Power source	20 VAC +/-10 %, 50/60 Hz, 100VA (Class 2) Use Nabco genuine Class 2 power supply module ONLY.
Current consumption	Max. 5A
Power output (# 9DC12V and # 7)	12 VDC 0.35 amps (350 mA). Class2 Power Supply
Output Rating (# OUT A, # OUT B and # OUT C)	Relay output Max. 30V (42.4V peak) Max. 5A (0 to 20V) or 3.2A (20 to 30V) Class 2 Load Only
Output Rating (# OUT and # 7)	Open collector Transistor output Max. 30V (42.4V peak) Max. 50mA Class 2 Load Only
Recommended temperature range	-4º to 140 ºF (-20º to +60º C)
Maximum recommended door weight	600 pounds total (300 pounds each for a bi-part or 600 pounds for a single)
Hold open time delay range	0 to 67 seconds
Door movement range	4 to 137 inches (100 to 3500 millimeters)
Door movement range for the limited door opening feature	4 to 137 inches (100 to 3500 millimeters)
Back check range	2 to 5 inches. (50.8 to 127 millimeters) See page 13
LED display (LED blinks when an error occurs)	POWER: Red LED Light 61 (Activation): Green LED Light 6B (Holding Beam): Green LED Light H (Reduced opening): Green LED Light 62 (Activation): Green LED Light BA (Panic Breakout and OFF): Green LED Light ERROR: Red LED Blink

B. Input and Output Features

B.1. 16 Pin Terminal Block Assignments (All wires are identified by color)

No.	Symbol	Wire Color*	Description
1	9DC12V	Brown	This output terminal is a sensor power source. The output is 12 VDC with a maximum capacity of 0.35 amps (350 mA).
2	7	Red	This output terminal provides common ground for the 12 VDC power and signal source.
3	61	Black	This terminal is an activation signal input and will open the door based on a signal from the sensor that is active in one way mode.
4	6B	White	This terminal is the holding beam input, it will open or re-open a door when the holding beam signal is activated.
5	H	Green	This terminal is the reduced opening input. It enables reduced door opening when switched to Red (7).
6	M0	Orange	This terminal is the mode input switch one (SW1). It is used to achieve special functions (See Section B.2 on Rocker Switch Setting modes).
7	M1	Orange/ White	This terminal is the mode input for switch two (SW2). It is used to achieve special functions (See Section B.2 on Rocker Switch Setting modes). If an electric lock is used, the wire will show the lock's status. NOTE: All references to the mode switches are made in connection with ground (red).
8	62	Black/ Red	This input terminal receives the signal from the sensor that is switched out in ONE WAY mode.
9	SQ	Yellow	This input terminal allows a sequence of signals to open and close the door.
10	BA	Blue	This input terminal connects directly to Red (7) during normal operation. When the rocker switch is turned OFF or if the door is panicked open, it is disconnected from Red. It then stops door operation.
11	SLS	Green/ White	This terminal is the sidelite protection sensor input. At the fully closed position, this input will prevent the door from opening.
12	OUT A	Gray	This terminal is connected to the Normally Open contact on an internal relay. It is referred to as the "auxiliary relay output" elsewhere in this manual. It is used as a switch to sequence an electric strike, control other doors in an airlock situation or signal a remote computer on the door operation.
13	OUT B	Gray	This terminal is connected to the Normally Close contact on an internal relay.
14	OUT C	Violet	This terminal is the common for output wire OUT A or OUT B.
15	OUT	Brown/ Yellow	This terminal is connected to an internal transistor with open collector in the Controller.
16	7	Red	This output terminal provides common ground for the 12 VDC power and signal source.

* Color1/Color2 denotes a base wiring color1 with a stripe color2. For instance:
Black/Red indicates a Black wire with a Red stripe.

NOTE: Use a flat-blade screwdriver to remove the terminal connector from the control. Be careful to ensure all wires are matched to the appropriate terminals. Each terminal is numbered with corresponding information on the face plate of the control.

B.2 Rocker Switch Settings (when wires M0 & M1 are switched to Red 7 the state is indicated by "ON")

Mode	Wire M0	Wire M1	Wire H	Description
Two Way mode	OFF	OFF	-	In this mode, both sensors on terminals 3 and 8 and the Holding Beam* on terminal 4 will receive signals while the door is closed or cycling.
Hold-open mode	ON	ON	-	No activation is needed when this selection is made. Door is held open.
Reduced-open mode	-	-	ON	The door will go to the reduced opening position upon activation.
One-way traffic mode	ON	OFF	-	In this mode, only the sensor on terminal 3 will receive signals while the door is closed. The sensor on terminal 8 and Holding Beam on terminal 4 will be ignored while the door is closed. During the door cycle both the sensors and the Holding Beam will receive signals. The electric lock will be active to prevent exterior entry.
Night traffic mode	OFF	ON	-	No sensor on terminals 3 or 8 or the Holding Beam on terminal 4 will receive signals while the door is closed. Activation is only accomplished by switching M0 to Red (7). During the door cycle both the sensors and the Holding Beam will receive signals. The electric lock remains locked except for activations from wall plates or card readers.

B.3 Diagnostic LED's for Easy Troubleshooting

Symbol	LED Color	Description
POWER	RED	This red LED indicates power on.
61	GREEN	Activation: When this green LED is ON, it indicates a signal on the Black (61) wire. This wire carries the signal for the activation circuit that will open the door from a closed position in TWO WAY or ONE WAY mode only. It usually connects to the interior motion sensor.
6B	GREEN	Holding Beam: When this green LED is ON, it indicates a signal on the White (6B) wire. Note: The U30 controller can be programmed to ignore the Holding Beam when the door is fully closed.
H	GREEN	Reduced opening: When this green LED is ON, it indicates a signal on the Green (H) wire. This wire carries the signal to the U30 Controller to put the door into reduced opening.
62	GREEN	Activation: When this green LED is ON, it indicates a signal on the Black/Red (62) wire. This wire carries the signal for the activation circuit that will open the door from a closed position in TWO WAY mode only. It usually connects to the exterior motion sensor.
BA	GREEN	Panic Breakout and OFF: When this green LED is OFF, it indicates a closed signal on the Blue (BA) wire and the door is ready for operation. When this LED is ON the circuit is open and the unit will not operate. This wire carries the signal for the panic breakout circuit that will stop door operation if the door is panicked open or if the rocker switch is turned OFF.

continued on next page ….

B.3 Diagnostic LED's for Easy Troubleshooting (continued)

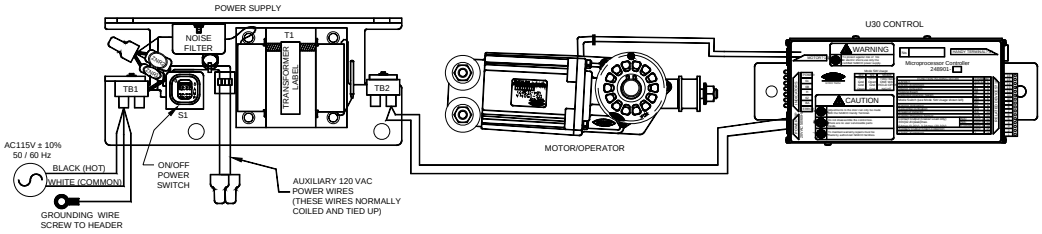
Symbol	LED Color	Description
ERROR	RED	When this red LED is OFF, it indicates normal operation. This LED is flashing intermittently, it indicates the following: •1 flash: The door is in RECYCLE mode. •2 flashes: 12VDC output is overloaded. •3 flashes: There is a diagnostic error. Connect Handy Terminal to check error details.
There are also combinations of the above flashes as shown below:		
ERROR	RED	1 flash and 2 flashes: Recycle and 12VDC overload
ERROR	RED	1 flash and 3 flashes: Recycle and diagnostic error
ERROR	RED	2 flashes and 3 flashes: 12VDC overload and diagnostic error
ERROR	RED	1 flash, 2 flashes and 3 flashes: Recycle, 12VDC overload and diagnostic error

B.4 Before turning on power

NOTE: The rocker switches should be set as follows: ON and TWO WAY. They can be reset for the desired options after the Controller is programmed with the Handy Terminal.

B.4.1 Determine correct wiring: Make sure all components are wired and set properly. The unit must be grounded for safe and consistent operation (See Figure 2).

B.4.2 Determine correct supply voltage: Make sure the power source is 115 VAC +/- 10%.



Wiring Diagram for Power & Grounding
Figure 2

B.4.3 Handy Terminal: When using the Handy Terminal remember that long term exposure to temperatures colder than 10º Fahrenheit should be avoided. Store the unit at room temperature.

B.4.4 Fuse: The fuse is located in the Power Supply Module. The fuse is reset-able. Do not attempt to repair the U30 Controller or the Power Supply Module other than resetting the fuse.

C. Initial Setup

C.1 Wiring: The U30 Controller setup involves correct wiring of the unit followed by door operation setup. If the sensors are not connected, the door can be operated and the pre-programmed parameters viewed by pressing the TEST button on the Handy Terminal.

C.2 Setting initial door position: Start by placing the door at half open. Then plug in the Handy Terminal.

C.3 Turn on the power: Note the direction of movement. The door should slowly close as per the POWER ON factory settings (see page 11) .

C.4 Determining Correct Handing: If the door slowly opens, it has been set up with the wrong hand. On a bi-parting door, reverse the belt clips on the doors or on a single slider, set R-hand/L-hand correctly with the Handy Terminal before making any other adjustments. Remove the Handy Terminal. Note the direction of movement. Refer to Section D.3.2.6 on Page 11. The door should now close slowly. Connect the Handy Terminal again.

C.5 Initial Handy Terminal Display: After the power is turned on, the Handy Terminal will guide the user through the set-up procedures and U30 Controller programming. As it is initializing for the programming mode, it will display “GYRO TECH HANDY TERMINAL”. This will be followed by a series of displayed messages and a list of acceptable options.

C.6 Setting the Stroke of the Door: Choose an option by placing the cursor over the option and pressing the ENTRY button. Follow these three steps as prompted by Handy Terminal messages to initially set up the door.

C.6.1 When the message reads SLIDE/SWING/STRK, move the cursor to the Y position and press ENTRY.

C.6.2 When the message reads SWING DOOR Y N, ensure the cursor is over the N and press ENTRY.

C.6.3 When the message reads FULL OPEN POINT PRESS TEST, manually slide the door to the full-open point and press TEST. The sliding panel will slowly close while measuring the stroke of the door.

When the unit has completed this initial stroke setup, the display 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 settings 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. A table has been provided on the next page showing the initial 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. See Section D to learn about these options.

C.7 Disconnecting the Handy Terminal: The Handy Terminal can be disconnected after the last test has been completed and the display has been stabilized. This process normally takes 10 seconds after the display indicates it is ready to accept new input from the Handy Terminal. After this time lapse the Handy Terminal can be disconnected.

CAUTION:
Failure to follow the disconnecting procedures may result in total loss of communication between the U30 Controller and Handy Terminal.

If power to the U30 Controller needs to be disconnected, wait an additional 10 seconds to be sure all settings have been established. The door will now operate based on the pre-set settings shown in the following table. If changes are desired, proceed to Section D.

C.8 Table of Factory Settings and Available Functions: For the Setup of Sliding Door Only

Adjustable Function		This Function Only Available with Blue Handy Terminal	Factory setting	Options
Standard Functions	Opening speed		3	Range 0 - 7
	Closing speed		2	Range 0 - 7
	Time delay		2	Range 0 - 7
Feeling Adjustments	Start power		3	Range 0 - 7
	Check power		6	Range 0 - 7
	Reaction power		4	Range 0 - 7
	Back-check speed		1	Range 0 - 3
	Latch-check speed		1	Range 0 - 3
Special Functions	Hold close		Y	Yes or No
	Holding beam		Y	Yes or No
	Power on		0	Range 0 - 3
	Manual opening		0	Range 0 - 3
	Reduced opening		N	Yes or No
	Recycle (Motor rotation - see page 11)		N	Yes or No
	Recycle sensitivity		1	Range 0 - 3
	After recycle		Y	Yes or No
	Auxiliary output 1		0	Range 0 - 3
	Output timer 1*		3	Range 0 - 3
	Extended time delay		7	Range 0 - 7
Extra Functions	Back-check position	X	0	Range 0 - 3
	Latch-check position	X	0	Range 0 - 3
	Auxiliary output 2	X	3	Range 0 - 3
	Output timer 2*	X	0	Range 0 - 3

* Output timer 1 selection is required only when selecting 0 or 2 on the Auxiliary output 1.
Output timer 2 selection is required only when selecting 2 on the Auxiliary output 2.

D. Adjustment Procedures

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

D.1. Standard Function Adjustments

D.1.1 Make sure the Handy Terminal is in the standard functions program located after initial 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.

D.1.2 There are three categories of standard functions

D.1.2.1 *Opening Speed* - The message will read OPEN SPEED 3. Eight options are available from 0 to 7. Speeds range 2 inches per second (.06 meters per second) to 31 inches per second (.80 meters per second). Seven is the fastest, 0 is the slowest.

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

D.1.2.2 *Closing Speed* - The message will read CLOSE SPEED 2. There are eight options from 0 to 7. Speeds range 2 inches per second (.06 meters per second) to 24 inches per second (.60 meters per second). Seven is the fastest, 0 is the slowest.

D.1.2.3 *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 the Extended Time Delay settings found in the Special Function adjustments settings.

D.2 Feeling Adjustments

D.2.1 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.

D.2.2 There are five available feeling adjustments:

D.2.2.1 *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 is desired.

D.2.2.2 *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.

D.2.2.3 *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.

D.2.2.4 *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. Zero (0) is the slowest setting at 1.4 inches per second (4 centimeters per second), and 3 is fastest at 4 inches per second (10 centimeters per second).

D.2.2.5 *Latch Check Speed* - The message will read LATCH C. SPEED 1. This is the speed of the door just before the fully closed position. The same 4 speeds as back check are offered. Zero (0) is the slowest speed and 3 is the fastest.

D.3 Special Function Adjustments

D.3.1 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 the Special Functions program.

D.3.2 There are 10 adjustments:

D.3.2.1 *Hold Close* - (using Motor Power to hold the door closed) - The message will read HOLD CLOSE Y. Option N leaves the door free at closed position. Selecting Y directs the U30 Controller to hold the door closed.

D.3.2.2 *Holding Beam* - The message will read HOLDING BEAM Y. Choose Y and the door opens when the holding beam is activated while the door is in the closed position, or choose N and the door stays closed when the holding beam is activated .

D.3.2.3 *Power On* - The message will read POWER ON 0. This option will determine how the door will react when the power is turned on after having been turned off or interrupted. A typical example would be if the owner unlocks the door and opens it manually before turning on power.

Zero - The door slowly reaches full closed and is ready for normal operations.
One - If the door is activated while closing slowly, the door will fully open slowly and then close.
Two - The door slowly reaches full open, then closes.
Three - The door stays in manual-open position until activated, then opens slowly and closes.

D.3.2.4 *Manual Opening* - The message will read: MANUAL OPEN 0. After the unit has been completely set up and is operating, a choice is offered on how the door will act if manually opened from the fully closed position. There are four options:

Zero - The door will remain in the same position it was manually opened to.
One - When the door is opened manually, it will power open.
Two - After the door has been manually opened, it will slowly close.
Three - The door will power close while is being opened manually.

D.3.2.5 *Reduced opening* - The message will read RED. OPENING Y N. This will enable the reduced opening of the door. Select Y and press entry. Manually slide the door to the desired open width and push TEST. The door will close slowly, memorizing the point of reduced width. Reduced opening will work when the Handy Terminal is disconnected and the reduced opening is selected with the rocker switch.

D.3.2.6 *Recycle* - On the U30 control this setting is used to set the direction of motor rotation for hand of the door. On previous U series controls it is associated with the RECYCLE function. On the U30 control, this motor rotation function is set to N, counter clockwise. Select “Y” for the opposite hand, clockwise rotation.

On the U30 control, the RECYCLE function is automatically set to always reopen the door if it strikes an object during the closing cycle.

D.3.2.7 *Recycle Sensitivity* - The message will read: RECYCLE SENS. 1. This setting adjusts how hard the door will push against an object before it recycles.

Zero(0) - DO NOT USE THIS SETTING!
One(1) - Soft
Two(2) - Medium
Three(3) - Hard

D.3.2.8 *After Recycle* - The message will read: AFTER RECYCLE Y. This adjusts for operation after the door reaches the full open position caused by a 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 close.

D.3.2.9 *Auxiliary Output 1* - The message will real AUX. OUTPUT 0. This will determine when the internal form C relay connected to OUT A (Normally Open) or OUT B (Normally Closed) and OUT C (Common) terminals is picked. This internal relay is used for the operation of an electric lock or to signal another controller, relay or other device. There are 4 options:

Auxiliary Output = Zero: This option enables operation of the electric lock and sets the time delay between release of the lock and door movement. Upon activation, the internal relay closes via the “OUT A” or “OUT B” and “OUT C” wires for the operation of the electric lock. Then, according to the setting of OUTPUT TIMER below, the door will begin opening.

If Zero is chosen, then the next message will read OUTPUT TIMER 3.
This option has four sub-options:

Zero - 1/4 second
One - 1/2 second } (for magnetic locks)
Two - 1 second
Three - 1 second (for electric strikes)

NOTE: Sub-option two is recommended for magnetic lock applications & sub-option three is recommended for electric strike applications. This will engage or disengage a jammed lock up to ten times before displaying an error message that will read: “Error_4”. This error can be canceled by a power reset. For magnetic locks, 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. For electric strikes, the strike releases for three seconds then re-engages.

Auxiliary Output = One: The air lock option will instruct the relay to close to prevent a second door from opening until the first door is closed, in a passageway situation.

Auxiliary Output = Two: The sequential door operation option will instruct the relay to close thereby activating a second door for a set time period. It requires selecting the time delay between the first and second door operations.

If Two is chosen, then the next message will read OUTPUT TIMER 3.
Four sub-options are offered:

Zero - 2 seconds
One - 4 seconds
Two - 6 seconds
Three - 8 seconds

Auxiliary Output = Three: A relay signal indicating a fully closed position will be provided. This signal would be used by the Gyro Tech Access Control Panel or other similar security controls.

D.3.2.10 *Extended Time Delay* - The message will read: EXT. TIME DELAY 7. It enables an extended time delay beyond the zero to seven seconds standard time delay set in Standard Function Adjustments on page 10. 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.

D.4 History Data

D.4.1 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.

D.4.1.1 *Maintenance Cnt* - Indicates the number of times a Handy Terminal has been connected. It will record up to 255 connections.

D.4.1.2 *Operation Cnt* - Indicates the number of full door operations. It is updated every 100 door cycles. The counter will display up to 6,553,500 cycles.

D.4.1.3 *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. It will display up to 255 recycles. Able to reset the number by Handy Terminal.

To reset the RECYCLE count, perform the following steps:
1. Indicate the RECYCLE COUNT on the Handy Terminal.
2. Push the “L” button.
3. “CLR RECYCLE CNT?” will be indicated on the screen.
4. Select Y and push the entry button.
The RECYCLE COUNT will now be cleared.

D.4.1.4 *Run Away Cnt* - If CPU operation become erratic, the CPU is reset by the Watchdog feature. If such a phenomenon happens, the count is increased.

D.5 Extra Function Adjustments

D.5.1 The “Extra Function” settings are only available when using a Blue Handy Terminal.

D.5.2 The message will read: EXTRA FUNCTION Y N. Press entry to proceed to the next section or move the cursor to Y and press entry to start the Extra Functions program.

D.5.3 There are 4 adjustments:

D.5.3.1 *Back-check Position* - The message will read FUNCTION(11) 0. This option will determine where back-check starts in the opening cycle.

Zero - 2 inch prior to the full open position.
One - 3 inch prior to the full open position.
Two - 4 inch prior to the full open position.
Three - 5 inch prior to the full open position.

D.5.3.2 *Latch-check Position* - The message will read FUNCTION(12) 0. This option will determine where latch-check starts in the closing cycle.

Zero - 2 inch prior to the fully closed position.
One - 3 inch prior to the fully closed position.
Two - 4 inch prior to the fully closed position.
Three - 5 inch prior to the fully closed position.

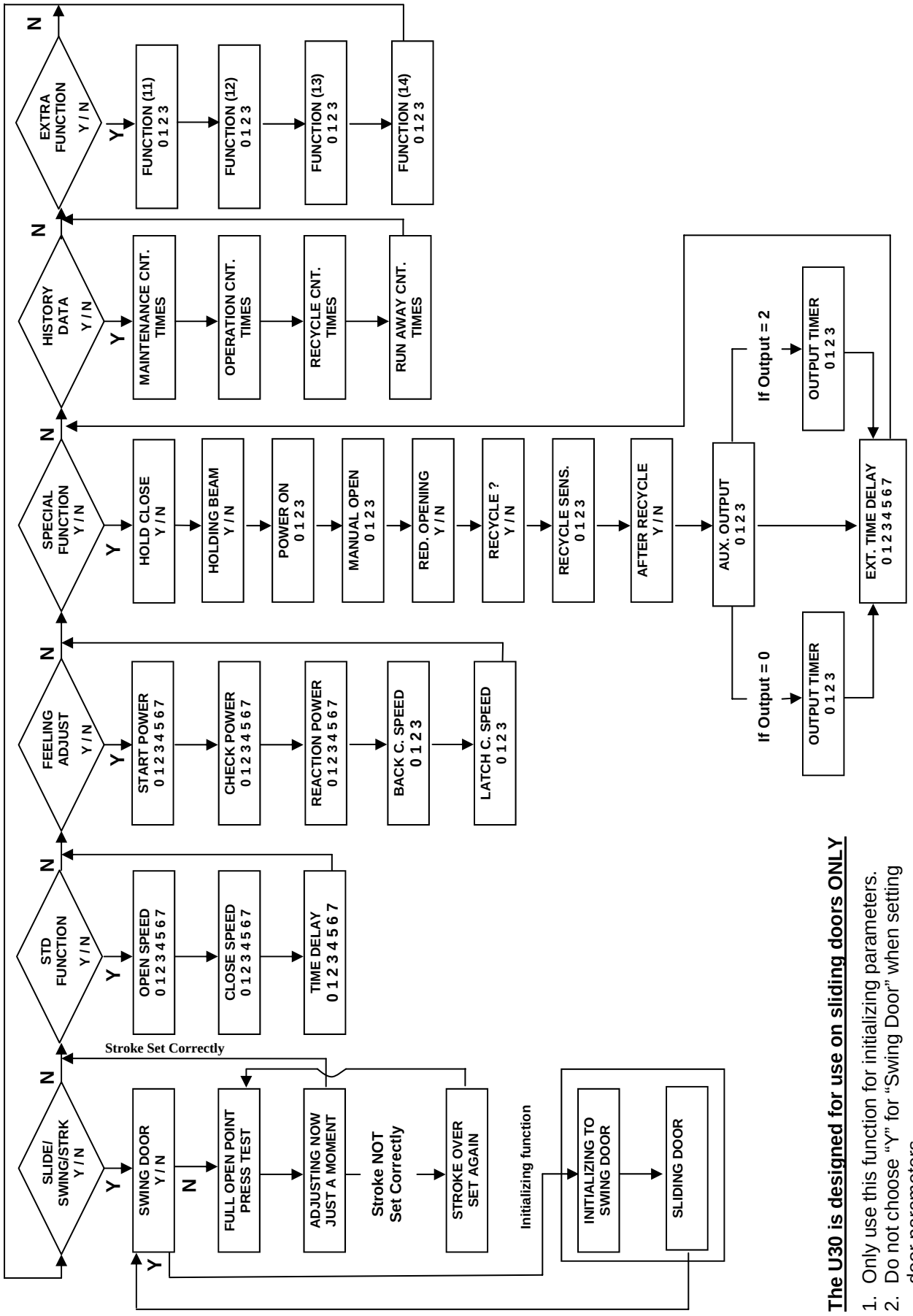
D.5.3.3 Auxiliary Output 2 - The message will read FUNCTION(13) 3. This will determine when the internal transistor connected to OUT on terminal 15 (BRN/YEL) and 7 on terminal 16 (RED) turns on for the operation of another controller, relay or other device. There are 4 options:

Zero - The transistor will turn on at the full open position.
One - Air Lock option: This will instruct the transistor to close to prevent a second door from opening until the first door is closed, in a passageway situation.
Two - Sequential Door Operation: This will instruct the transistor to close thereby sequentially activating a second door for a set time period. This requires selecting the time delay between the first and second door operations. The message will read FUNCTION(14) 0. Four sub-options are offered:

Zero - 2 seconds
One - 4 seconds
Two - 6 seconds
Three - 8 seconds

Three - The transistor will turn on to indicate a fully closed position. This signal would be used by the Gyro Tech Access Control Panel or other similar security controls.

D.6 Programming Flowchart



The U30 is designed for use on sliding doors ONLY

1. Only use this function for initializing parameters.
2. Do not choose "Y" for "Swing Door" when setting door parameters.

E. Troubleshooting

E.1 PROBLEM: The door is recycling on its own.

E.1.1 Obstructions during the closing cycle will cause the door to recycle open. Operation should continue as soon as recycling is done. Check for any obstructions that are preventing the door from closing such as tight weather stripping, binding rollers or guides, debris in the floor track etc. The U30 Controller will count every recycle and indicate the count on the Handy Terminal.

E.1.2 Obstructions during the opening cycle will cause the door to stop. After losing the activating signal and time delay, the door will close. If the activation signal continues, the door remains open in stopped position.

E.1.3 Header mounted sensors that are incorrectly adjusted can detect a closing door panel or other moving objects and reopen the door. Re-adjust motion sensors.

E.1.4 Crosstalk between adjacent sensors will cause sensor ghosting and consequent door recycling. Set different frequency modes for each sensor.

E.2 PROBLEM: There was a power failure.

E.2.1 A power failure lasting less than one second will not affect operation.

E.2.2 A power failure of one second or more will cause the U30 Controller to brake the door fully.

E.2.3 When the power is turned on, the U30 Controller will operate. Settings to the door operation remain in effect.

E.3 PROBLEM: There was trouble detected by the controller.

E.3.1 For the problems indicated in the chart on the following page, the U30 Controller will stop the door and memorize the nature of the trouble.

E.3.2 If the U30 Controller does not operate at all, check the wiring connections and activation devices. LED indicators on the U30 control may help. Check to ensure there is 120 VAC to the power supply and 20 VAC to the controller. Connect the Handy Terminal for error messages, clear and repair. The final option would be to change the U30 Controller or motor.

E.4 PROBLEM: The door does not open at all.

E.4.1 Set rocker switch to ON.

E.4.2 Check the sensor wiring and activation sensors. LED indicators (61, 6B, 62) will light when activation occurs. Try shorting out terminals 2 (Red) & 3 (Black) to simulate an activation signal.

E.4.3 Connect the Handy Terminal and push “TEST” to simulate an activation signal.

E.4.4 Measure voltage between terminals 2 (Red) and 10 (Blue). For normal operation, the Blue panic breakout wire follows a series circuit through the ON/OFF switch, through the panic breakout switches and to Red (common). With rocker switch in the ON position and sidelites closed, voltage should equal 0 VDC. If voltage is 12 VDC, the panic breakout circuit is open. Check Blue wire and determine where the circuit is open. LED indicator (BA) may help.

E.5 PROBLEM: Abnormal door operation

E.5.1 Check or reset the stroke and check the R-hand/L-hand setting. Check the other Handy Terminal settings.

E.6 PROBLEM: Display does not move from “GYRO TECH HANDY TERMINAL”

E.6.1 Ensure rocker switch is set to ON.

E.6.2 Measure voltage between terminals 2 (Red) and 10 (Blue). For normal operation, the Blue panic breakout wire follows a series circuit through the ON/OFF switch, through the panic breakout switches and to Red (common). With rocker switch in the ON position and sidelites closed, voltage should equal 0 VDC. If voltage is 12 VDC, the panic breakout circuit is open. Check Blue wire and determine where the circuit is open. LED indicator (BA) may help.

E.6.3 Install jumpers in all exposed blue wire connectors.

E.7 PROBLEM: The Handy Terminal buttons or Display does not work.

E.7.1 The unit is too cold. Bring the unit up to room temperature.

E.7.2 Terminal or cable may be defective. Try using it on another door to determine the defective component.

E.7.3 Cable from controller to terminal port is defective. Replace cable.

E.8 HANDY TERMINAL ERROR MESSAGES

NO.	ERROR MESSAGE	MEANING	DOOR BEHAVIOUR	RESOLUTION: U30 CONTROLLER MAY BE RESET BY PERFORMING ONE OF THE FOLLOWING PROCEDURES
1.	ROM ERROR	Internal ROM Error There is an internal memory error.	Door does not work at all.	Reset U30 Controller by turning 120 VAC off then on again OR connect Handy Terminal & clear error message
2.	ERROR RESET AGAIN	Communication Error Communication between U30 Controller and Handy Terminal is not taking place.	Control does not retain new settings from Handy Terminal.	Reset U30 Controller by turning 120 VAC off then on again. If problem persists the cables, or control and/or Handy Terminal might be defective. Tip: Try using Handy Terminal and/or harness on a different door.
4.	EEPROM ERROR	Internal EEPROM Error There is an internal memory error.	Door does not work at all.	Reset U30 Controller by turning 120 VAC off then on again OR connect Handy Terminal & clear error message
5.	ERROR_4	Electric Lock Error Activation device was signaling the control to open door but the electric lock failed to unlock or bound up ten times in a row.	Door does not work at all.	Reset U30 Controller by turning 120 VAC off then on again OR connect Handy Terminal & clear error message
6.	ERROR_5	Recycle Error Recycle was detected more than three times at same door position continuously.	Door works normally.	Connect Handy Terminal & clear error message
7.	ERROR_6	Interior Sensor Error The sensor connected to the Black (61) wire is sending an error message to the controller.	Door does not work at all. But electric lock works by means of rocker switch.	Replace sensor.
8.	ERROR_7	Exterior Sensor Error The sensor connected to the Black/Red (62) wire is sending an error message to the controller.	Door does not work at all. But electric lock works by means of rocker switch.	Replace sensor.

Above error codes might have been generated as the result of a hardware problem. If resetting the software as described above does not resolve the problem, the cause of the hardware malfunction must be determined and corrected.

For additional assistance, contact NABCO Entrances, Inc. toll free at 1-877-622-2694