



U30 Microprocessor Control
Setup and Programming Manual; Revision "E" Software
P/N C-00203 Rev 2-20-18

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Associated Manuals Part Numbers: Model GT1175 Electrical Installation Manual **with U30 Microprocessor Control;
Revision "E" Software** P/N C-00198
NABCO Price Book P/N 16-9244-30 (for Sensors, Switches, and Accessories)

WARNING

- Turn OFF all power to the Automatic Door if a Safety System is not working.
• Instruct the Owner to keep all power turned OFF until corrective action can be achieved by a NABCO trained technician. Failure to follow these practices may result in serious consequences.
• NEVER leave a Door operating without all Safety detection systems operational.

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CHAPTER 1: WARNING LABELS

Warning labels are universal and used to alert an individual of potential harm to one's self or to others. The following warning labels are listed in a hierarchy order that defines the most potential danger first, and the least potential danger last. Please refer to this page in the event that a warning label is displayed within this manual and further definition needs to be explained.

DANGER

Indicates potentially dangerous situations. Danger is used when there is a hazardous situation where there is a *high* probability of severe injury or death. It should not be considered for property damage unless personal injury risk is present.

WARNING

Indicates a hazardous situation which has *some* probability of severe injury. It should not be considered for property damage unless personal injury risk is present.

CAUTION

Indicates a hazardous situation which *may result in a minor injury*. Caution should not be used when there is a possibility of serious injury. Caution should not be considered for property damage accidents unless a personal injury risk is present.

Attention: A situation where material could be damaged or the function impaired.

Notice: Indicates a statement of company policy as the message relates to the personal safety or protection of property. Notice should not be used when there is a hazardous situation or personal risk.

Note: Indicates important information that provides further instruction.

CHAPTER 2: GENERAL SAFETY RECOMMENDATIONS

WARNING

Read, study and understand general safety recommendations, warning labels, installation and operating instructions contained in, or referenced in this manual before operating. If you do not understand the instruction, ask a qualified technician. Failure to do so may result in bodily injury, or property damage and will nullify all warranties.

DANGER

Disconnect all power to the junction box prior to making any electrical connections. Failure to do so may result in serious personal or fatal injury. When uncertain whether power supply is disconnected, always verify using a voltmeter.

DANGER

Do not place finger or uninsulated tools inside the electrical controller. Touching wires or other parts inside the enclosure may cause electrical shock, serious injury or death.

CAUTION

All electrical troubleshooting or service must be performed by trained, qualified electrical technicians and comply with all applicable governing agency codes.

CAUTION

If the door appears broken or does not seem to work correctly, it should be immediately removed from service until repairs can be carried out or a qualified service technician is contacted for corrective action.

Notice: This manual and the owner's manual must be given to and retained by the purchasing facility or end user.

Notice: All installation changes and adjustments must be made by qualified, NABCO trained technicians.

Notice: Wiring must meet all local, state, federal or other governing agency codes.

CHAPTER 3: SCOPE

SECTION 3.1: To the Installer

The purpose of this manual is to familiarize the installer and purchaser with the proper setup and programming of the U30 Microprocessor Control. It is essential that this equipment be properly installed and operational before the door is used by the public. It is the installer’s responsibility to inspect the operation of the entrance system to be sure it complies with any applicable standards. In the United States, ANSI Standard 156.10 (Used to cover Full Energy doors) and ANSI Standard 156.38 (Used to cover Low Energy doors) apply. Other local standards or codes may apply. Use them in addition to the ANSI standards.

The owner should determine the door is operating properly and should immediately call for service if there is any malfunction. All installation changes and adjustments must be made by qualified, NABCO trained technicians. If after troubleshooting a problem, a satisfactory solution cannot be achieved, please call Nabco Entrances at 1-877-622-2694 between 8 am – 4:30 pm Central time for additional assistance.

CHAPTER 4: GETTING STARTED

The U30 Microprocessor Controller is utilized on all GT-1175 Slide Door systems to control numerous operating characteristics that include (but not limited to): speed, recycling sensitivity and reduced opening width.

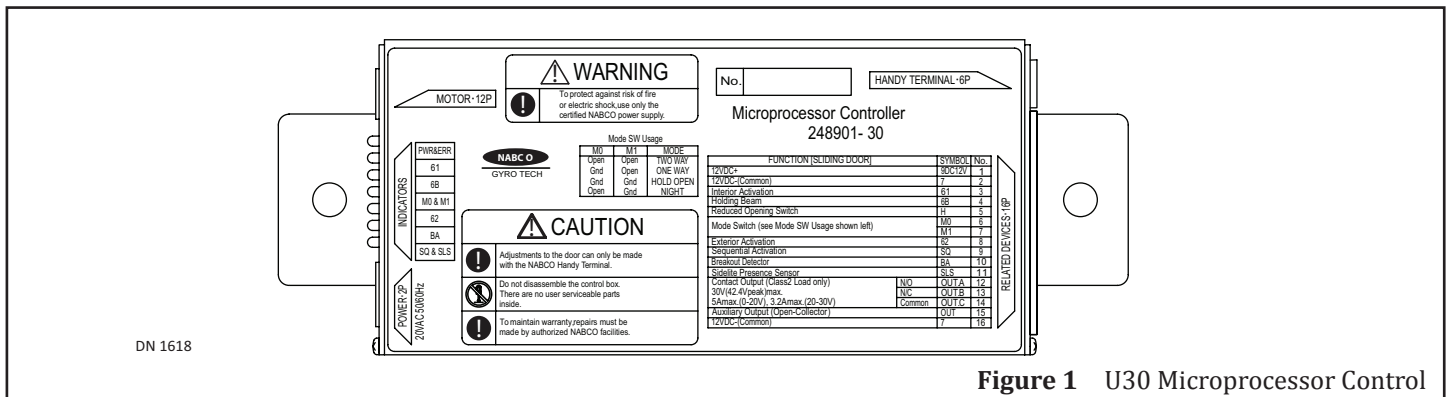


Figure 1 U30 Microprocessor Control

The U30 Microprocessor Controller is also utilized to output power to accessories and/or auxiliary equipment such as Sensors, and Modules. There are times when the U30 Microprocessor Controller is not utilized to output power because some accessories and/or auxiliary equipment are shipped with it’s own dedicated power supply.

Table 1 U30 Microprocessor Control Specifications

Specification	Description
Recommended Temperature Range	-4° to 140°F (-20° to +60° 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	0 to 67 seconds
Door Movement range	4 to 137 inches (100 to 3500 millimeters)
Door Movement range for Limited Door Opening Feature	4 to 137 inches (100 to 3500 millimeters)
Back Check range	2 to 5 inches (50.8 to 127 millimeters)
History Data	Maintains data under the History Data program
Maintenance Count	Counts number of times Handy Terminal has been connected for service and tracking.
Operation Count	Counts number of full door operations (Operation counts are registered in increments of 100 per power-on period)
Recycle Count	Counts number of times the slide door has recycled (up to 255).

CHAPTER 5: INPUT AND OUTPUT FEATURES

Note: Use a flat-blade screwdriver to remove the Terminal Connector from the U30 Microprocessor Control.

Note: 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 U30 Microprocessor Control.

SECTION 5.1: 16 Pin Terminal Block Assignments

No.	Symbol	Function	Wire Color*	Description
1	9DC 12V	12VDC+	Brown	Output Terminal <ul style="list-style-type: none"> ▶ Sensor power source. ▶ Output is 12 VDC with a maximum capacity of 0.35 amps (350 mA).
2	7	12VDC- Common	Red	Output Terminal <ul style="list-style-type: none"> ▶ Provides common ground for the 12 VDC power and signal source.
3	61	Interior Activation	Black	Activation Signal Input <ul style="list-style-type: none"> ▶ Opens the door based on a signal from the Sensor that is active in one way mode.
4	6B	Holding Beam	White	Holding Beam Input <ul style="list-style-type: none"> ▶ Opens or re-opens a door when the holding beam signal is activated.
5	H	Reduced Opening Switch	Green	▶ Reduced Opening Input Enables reduced door opening when switched to Red (7).
6	M0 One Way	Mode Switch	Orange	Input for Switch 1 (SW1) <ul style="list-style-type: none"> ▶ Used to achieve special functions (Please refer to Table 3-2).
7	M1 Night		* Orange/ White	Input for Switch 2 (SW2): <ul style="list-style-type: none"> ▶ Used to achieve special functions (Please refer to Table 3-2). ▶ If an electric lock is used, the wire will show the lock's status. All references to Mode Switches are made in connection with ground (Red).
8	62	Exterior Activation	* Black/Red	Input Terminal Receives signal from a Sensor that is switched out in ONE WAY mode.
9	SQ	Sequential Activation	No Wire	Input Terminal One activation opens the door and another is required to close it.
10	BA	Breakout Detector	Blue	Input Terminal <ul style="list-style-type: none"> ▶ 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 (7) causing Slide door to stop operating.
11	SLS	Sidelite Presence Sensor	No Wire	Input Terminal <ul style="list-style-type: none"> ▶ Receives signal from Sidelite Sensor or additional devices. ▶ Programmable Input
12	OUT A	Contact Output	Gray	(N/O) Terminal is connected to the Normally Open contact on an Internal Relay. <ul style="list-style-type: none"> ▶ Referred to as the "Auxiliary Relay Output" elsewhere in this manual. ▶ Used as a switch to sequence Electric Strikes, control other doors in an Airlock situation, or signal a Remote Computer on the door operation.
13	OUT B		Gray	(N/C) Terminal connected to the Normally Close contact on an Internal Relay.
14	OUT C		Violet	(Common) Terminal is the Common for output wire OUT A or OUT B.
15	OUT	Auxiliary Output (Open - Collector)	Yellow	▶ Terminal connected to an Internal Transistor with open collector in the U30 Microprocessor Control. <ul style="list-style-type: none"> ▶ Primarily Used for Sensor Monitoring Function.
16	7	12VDC- Common	Red	Terminal connected to an Internal Transistor with open collector in the U30 Microprocessor Control.

* Color 1/Color 2 denotes a base wiring Color 1 with a Stripe Color 2 (e.g. Black/Red = Black wire with a Red stripe).

SECTION 5.2: Rocker Switch Settings

Mode	Wire M0	Wire M1	Wire H	Description
Two Way Mode	OFF	OFF	-	Both Sensors on Terminals 3 and 8 will activate the door when closed.
Hold Open Mode	ON	ON	-	No activation needed. Door is held open.
Reduced-Open Mode	-	-	ON	Door will go to the reduced opening position upon activation.
One-Way Traffic Mode	ON	OFF	-	<ul style="list-style-type: none"> ▶ Only the Sensor on Terminal 3 will activate the while the door is closed. ▶ The Sensor on Terminal 8 and the 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 reopen the door. ▶ The electric lock will be active to prevent exterior entry.
Night Traffic Mode	OFF	ON	-	<ul style="list-style-type: none"> ▶ No Sensor on Terminals 3 or 8 or the Holding Beam on Terminal 4 will open the door while the door is closed. ▶ Activation is only accomplished by switching M0 to Red (7), or by using all activation on inputs SLS or SQ. ▶ 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.

SECTION 5.3: Diagnostic LEDs

Symbol	LED Color	Flashes	Description
PWR & ERR	Red	Steady LED	Indicates power is ON.
		LED intermittently flashes (1 time)	Door is in Recycle Mode
		LED intermittently flashes (2 times)	12VDC output is overloaded
		LED intermittently flashes (3 times)	<ul style="list-style-type: none"> ▶ Diagnostic Error. ▶ Connect the Handy Terminal to check details.
61	Green	Flashes	Description
		LED is ON	▶ Indicates a signal on the Black (61) wire
		▶ Black Wire (61)	<ul style="list-style-type: none"> ▶ Carries the signal to the activation circuit that will open the door from a closed position in TWO WAY or ONE WAY mode only. ▶ Usually connects to the Interior motion sensor.
6B	Green	Flashes	Description
		LED is ON	Holding Beam: Indicates a signal on the White (6B) wire
		Note: The U30 Microprocessor Control can be programmed to ignore the Holding Beam when the door is fully closed.	
M0 & M1	Green	Flashes	Description
		LED is OFF	Slide Door is in Two-Way mode
		LED is ON	Slide Door is in Hold Open mode
		LED intermittently flashes (1 time)	Slide Door is in One-Way mode
		LED intermittently flashes (2 times)	Slide Door is in Night mode
62	Green	Flashes	Description
		LED is ON	Indicates a signal exists on the Black/Red (62) wire
		Black/Red Wire (62)	<ul style="list-style-type: none"> ▶ Carries the signal for the activation circuit that will open the door from a closed position in TWO WAY mode only. ▶ Usually connects to the exterior motion Sensor.

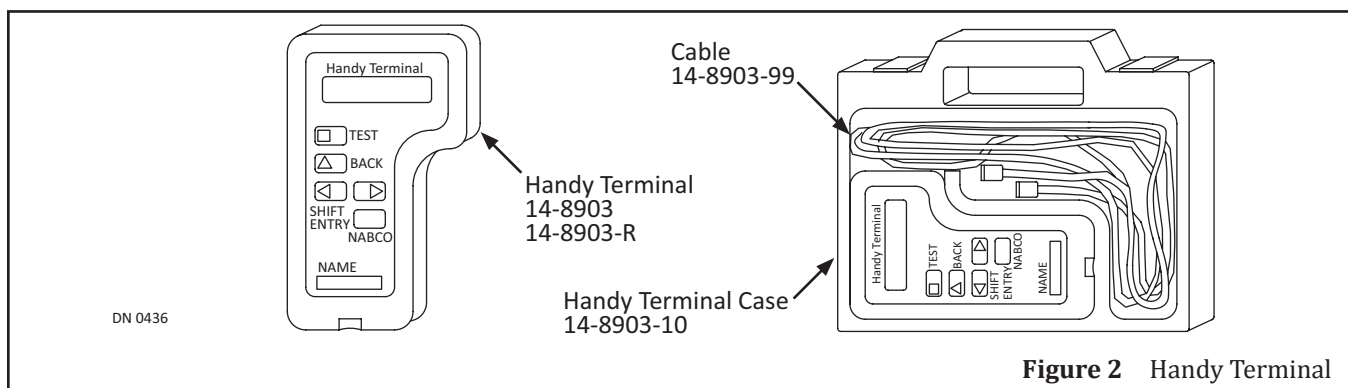
Symbol	LED Color	Flashes	Description
BA	Green	LED is OFF	Indicates a closed signal on the Blue (BA) wire, and that the door is ready for operation
		LED is ON	The circuit is open, and the unit will not operate
		Blue Wire (BA)	Carries the signal for the Panic Breakout circuit that will stop door operation if the door is panicked open or if the Rocker Switch is turned OFF.
SQ & SLS	Red	Flashes	Description
		LED is OFF	Both inputs are OFF
		LED is ON	SLS is Active
		1 flash	SQ is Active
		2 flashes	SLS and SQ are Active

CHAPTER 6: INSTALL THE HANDY TERMINAL

Note: When using the Handy Terminal, avoid long term exposure to temperatures that are colder than 10° Fahrenheit. Store the Handy Terminal at room temperature.

The Handy Terminal is used to test, change and/or reset programming for the U30 Microprocessor Controller software system which is used to operate the Sliding Door and manage History Data that stores:

- ▶ **Maintenance Count:** Indicates how many times a Handy Terminal was connected to the U30 Microprocessor Controller (up to 255 connections).
- ▶ **Operation Counts:** Indicates how many times Full Window Operations were performed (updated every 100 cycles; up to 6,553,500 cycles)
- ▶ **Recycle Counts:** Indicates how many times a Window reversed direction after sensing an object or the amount of friction that surpassed the recycle sensitivity setting. (up to 255 recycles). Recycle Counts can be reset by the Handy Terminal.
- ▶ **Run Away Counts:** Indicates when operation of the CPU becomes erratic. If this happens the CPU is reset by a Watchdog Feature, and the run away count is increased.

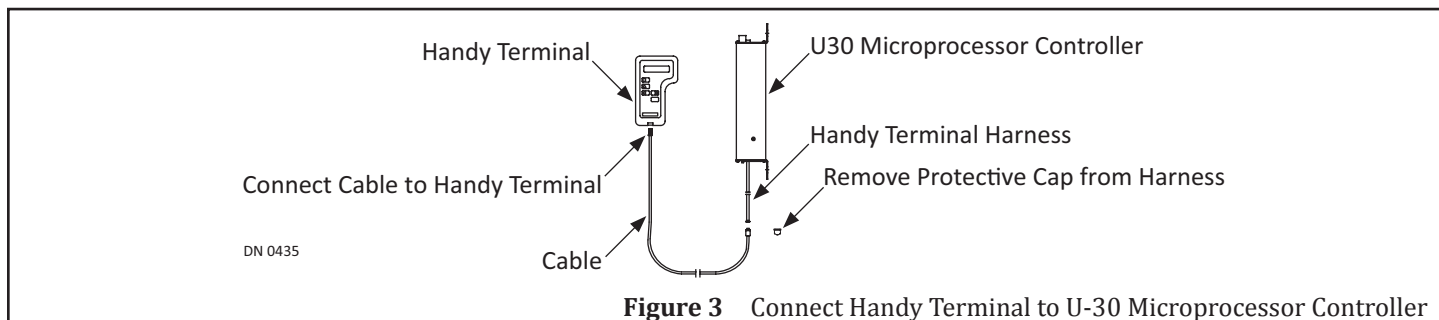


SECTION 6.1: Connect the Handy Terminal

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

1. With the power ON, obtain the Cable from the Handy Terminal Case. Please see Figure 4-3.
2. Go to the Handy Terminal Harness and remove the protective Cap. Set aside.
 - a. The Handy Terminal Harness should already be connected to the bottom of the U30 Microprocessor Controller, via a telephone jack.
3. Connect the plug end of the Cable (that is protected with a metal sleeve), to the socket of the Handy Terminal Harness.
 - a. The plug end of the Cable has multiple prongs that need to line up with the socket. Gently turn the plug end clockwise while trying to insert it until a connection can be made.

4. Obtain the Handy Terminal from the Handy Terminal Case.
5. Go to the bottom of the Handy Terminal and insert the (black) plug end of the Cable into the socket.
 - a. The Handy Terminal will begin to initialize the programming mode.



SECTION 6.2: Initialize the Handy Terminal

1. After the Handy Terminal is plugged into the Terminal Connector it is automatically turned ON. The Slide door will slowly close if it is not already closed.
 - a. GYRO TECH HANDY TERMINAL message will be displayed.
 - b. Without prompting, BUZZER Y N will be displayed.
2. Press the Shift buttons to select:
 - ▶ **Y** (Yes) to hear audible feedback after each menu button is pressed.
 - ▶ **N** (No) to not hear audible feedback after each menu button is pressed.
3. Press ENTRY.

SECTION 6.3: Disconnect the Handy Terminal

1. Wait at least (10) seconds before disconnecting the Handy Terminal to allow the:
 - ▶ Last Test to complete
 - ▶ Message Display to stabilize
2. Disconnect the Handy Terminal by sliding the metal jacket off the Terminal Connector before removing the Handy Terminal cable.
 - a. If power to the U30 Microprocessor Control needs to be disconnected, wait an additional (10) seconds to ensure all settings have been established. Please see Figure 4-1.

CAUTION

Slide back the metal sleeve FIRST and keep it pulled back while disconnecting the Cable plug from the Terminal Harness. Failure to do so will cause damage to both the Cable and Terminal Harness.

SECTION 6.4: Determine Correct Handing

1. With power off, manually slide the door open half way.
2. Turn power ON. The Slide door should slowly close (per Power On factory settings).
3. If the Slide door slowly Opens it was set up with the wrong Hand. In that event the U30 Microprocessor Control must first be programmed to set the direction of Motor Rotation for the Hand of the door. This is done by changing the setting of "RECYCLE" with the Handy Terminal. To do this:
 1. Plug the Handy Terminal into the Terminal Connector. Please see Figure 4-1.
 2. Press ENTRY until the screen displays SPECIAL FUNCTION ADJUSTMENTS. Select YES.
 3. Continue pressing ENTRY until the Screen displays RECYCLE. Change the setting.
4. Disconnect the Handy Terminal.
5. Repeat Steps 1 and 2 to confirm correct door operation.
6. Plug the Handy Terminal back into the Terminal Connector.

SECTION 6.5: Set the Stroke of the Slide Door

1. SLIDE/SWING/STRK Y N message will be displayed.
2. Press the Shift Button to highlight Y, then press ENTRY.
3. SWING DOOR Y N message will be displayed.
4. Press the Shift Button to highlight N. Press ENTRY.
5. FULL OPEN POINT PRESS TEST message will be displayed.
6. Manually slide the door to full open. Press TEST.
 - a. The Slide door will slowly close while measuring the Stroke of the door.
7. STD FUNCTION Y N message will be displayed after the initial Stroke setup is completed.
8. Press TEST to ensure Door behavior is based on current settings.
 - a. The Door will complete a full cycle then slow down at Latch Check point and Back Check point.
9. STD FUNCTION Y N message will be displayed after the Test is completed.
 - a. This concludes the initial setup to factory settings.
10. If the U30 Microprocessor Control:
 - ▶ Does not need to be programmed with custom settings:
 1. Disconnect the Handy Terminal and instruct the building owner of the Slide door’s operation.
 - ▶ Does need to be programmed with custom settings:
 1. Please refer to Chapter 5 “Adjustment Procedures” for detailed information.

CHAPTER 7: HANDY TERMINAL PROGRAMMING

Attention: While programming the U30 Control the following table can be used as a quick reference. For detailed description of each value, please refer to following tables within this Chapter.

Note: Extra Functions Adjustments settings are only available with the use of the Blue Handy Terminal.

1. Upon initializing the Handy Terminal, press the ENTRY button until the desired Adjustment Function is displayed.
2. Start the programming ➡ Press the Shift buttons to select Y ➡ Press ENTRY

Quick Reference Table							
Adjustment	Value	Description	Default	Adjustment	Value	Description	Default
Standard Function Adjustment	Opening Speed		3	Extra Function Adjustments	Function (1)		N
	Closing Speed		2		Function (2)		N
	Time Delay		2		Function (3)		N
Feeling Adjustments	Start Power		3		Function (4)		N
	Check Power		6		Function (5)		N
	Reaction Power		4		Function (6)		N
	Back Check Speed		1		Function (11)		0
	Latch Check Speed		1		Function (12)		0
Special Function Adjustments	Hold Close		Y		Function (13)		1
	Holding Beam		Y		Function (14)		0
	Recycle/Rotation Direction		N		Function (15)		0
	After Recycle		Y		Function (16)		0
	Recycle Sensitivity		1		Function (17)		1
	Reduced Opening		-	Function (18)		3	
	Auxiliary Output		3	Function (21)		0	
	Power On		0	Function (22)		0	
	Manual Opening		0	Function (23)		7	
	Extended Time Delay		7				

Standard Function Adjustments													
Adjustment	Description												
Opening Speed	<p>Message will read: OPEN SPEED 3</p> <ul style="list-style-type: none"> ▶ 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). 7 is the fastest, 0 is the slowest. ▶ For details on incremental Open speed adjustments, please refer to the “Extra Function Adjustments” table located within this Chapter. 												
Closing Speed	<p>Message will read: CLOSE SPEED 2</p> <ul style="list-style-type: none"> ▶ Eight options are available 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. ▶ For details on incremental Close speed adjustments, please refer to P/N 15-9000-30; U30 Microprocessor Control Manual. ▶ The U30 Microprocessor Control Rev-D requires the Closing Speed and Recycle Sensitivity to be adjusted based on door weight. Please see example of recommended settings below: 												
	<table border="1"> <thead> <tr> <th>Maximum Door Weight</th> <th>Closing Speed</th> <th>Recycle Sensitivity</th> </tr> </thead> <tbody> <tr> <td>160 pounds</td> <td>2 (Factory Default)</td> <td>1 (Factory Default)</td> </tr> <tr> <td>300 pounds</td> <td>2</td> <td>2</td> </tr> <tr> <td>600 pounds</td> <td>1</td> <td>3</td> </tr> </tbody> </table>	Maximum Door Weight	Closing Speed	Recycle Sensitivity	160 pounds	2 (Factory Default)	1 (Factory Default)	300 pounds	2	2	600 pounds	1	3
	Maximum Door Weight	Closing Speed	Recycle Sensitivity										
	160 pounds	2 (Factory Default)	1 (Factory Default)										
300 pounds	2	2											
600 pounds	1	3											
Time Delay	<p>Message will read: TIME DELAY 2</p> <ul style="list-style-type: none"> ▶ Eight options are available with time delays of 0 to 7 seconds. ▶ Determines number of seconds Slide door will stay open after Activating and Safety signals are cleared. ▶ For details on longer Time Delays, please refer to P/N 15-9000-30; U30 Microprocessor Control Manual. 												

Feeling Adjustments	
Adjustment	Description
Start Power	<p>Message will read: START POWER 3</p> <ul style="list-style-type: none"> ▶ Eight options are available. ▶ Accelerates the door at the start of the opening and closing cycles. ▶ Option 0 provides the slowest acceleration. Higher settings should be used on: <ul style="list-style-type: none"> • Heavier doors • Where high speed operation for opening is desired
Check Power	<p>Message will read: CHECK POWER 6</p> <ul style="list-style-type: none"> ▶ Eight options are available. ▶ Adjusts braking power to reduce door speed to the check or latch speed. ▶ Zero provides gradual braking, and 7 provides abrupt braking.
Reaction Power	<p>Message will read: REACTION POWER 4</p> <ul style="list-style-type: none"> ▶ Eight options are available. ▶ Controls how fast the door will react to an activating signal (Example: how long it takes a closing Slide door to reverse direction). ▶ Zero (0) provides the slowest reaction, 7 the fastest.
Back Check Speed	<p>Message will read: BACK C. SPEED 1</p> <ul style="list-style-type: none"> ▶ Four speeds are available. ▶ Speed of the door just before it reaches the fully open position. ▶ 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).

Feeling Adjustments	
Adjustment	Description
Latch Check Speed	<p>Message will read: LATCH C. SPEED 1</p> <ul style="list-style-type: none"> ▶ Four speeds are available. ▶ Speed of the door just before it reaches the fully closed position. ▶ 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).

Special Function Adjustments									
Adjustment	Description								
Hold Close (Using Motor Power)	<p>Message will read: HOLD CLOSE Y</p> <ul style="list-style-type: none"> ▶ Y: Directs the U30 Microprocessor Control to hold the Slide door closed. ▶ N: Leaves Slide door free at closed position. 								
Holding Beam	<p>Message will read: HOLDING BEAM Y</p> <ul style="list-style-type: none"> ▶ Y: Opens Slide door when the Holding Beam is activated and door is in the closed position. ▶ N: Keeps Slide door closed when the Holding Beam is activated. 								
Recycle	<p>On the U30 Microprocessor Control:</p> <ul style="list-style-type: none"> ▶ Recycle is used to set the direction of motor rotation for hand of the Slide door. On previous U series controls, Recycle was associated with the RECYCLE function. ▶ Motor Rotation function is set to N, counterclockwise. Select Y for the opposite hand, clockwise rotation. ▶ RECYCLE function is automatically set to reopen the door if it strikes an object during the closing cycle. 								
After Recycle	<p>Message will read: AFTER RECYCLE Y</p> <ul style="list-style-type: none"> ▶ Adjusts for operation after the Slide door reaches the full open position caused by a recycle. ▶ Y: Closes Slide door after the time delay expires. ▶ N: Keeps Slide door in the open position; it will take another activating signal for it to close. 								
Recycle Sensitivity	<p>Message will read: RECYCLE SENS. 1</p> <ul style="list-style-type: none"> ▶ Adjusts how hard the door will push against an object before it recycles. ▶ The following (4) options are available: <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 20%;">Zero</td> <td>DO NOT USE THIS SETTING!</td> </tr> <tr> <td>One</td> <td>Soft</td> </tr> <tr> <td>Two</td> <td>Medium</td> </tr> <tr> <td>Three</td> <td>Hard</td> </tr> </tbody> </table>	Zero	DO NOT USE THIS SETTING!	One	Soft	Two	Medium	Three	Hard
Zero	DO NOT USE THIS SETTING!								
One	Soft								
Two	Medium								
Three	Hard								
Reduced opening	<p>Message will read: RED. OPENING Y N</p> <ul style="list-style-type: none"> ▶ Enables the reduced opening of the door by following the instructions listed below: <ol style="list-style-type: none"> 1. Select Y and press the ENTRY button. 2. Manually slide the door to the desired open width and press the TEST button. <ol style="list-style-type: none"> a. Slide door will close slowly, memorizing the point of reduced width. ▶ Reduced opening will only work after the Handy Terminal is disconnected and Reduced Opening is selected on the Rocker Switch. 								

Special Function Adjustments				
Adjustment	Description			
Auxiliary Output	Message will read: AUX. OUTPUT 0 ► Determines 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. ► If Zero is chosen, the next message will read OUTPUT TIMER 3 . This option has(4) sub-options:			
	Zero	► Message will read: AUX. OUTPUT 0 ► 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	For Magnetic Locks: ► The selected Time Delay for Lock Release is also used for Time Delay to set the lock after the Slide door reaches the Fully closed position ► (1) second is recommended for Magnetic Locks.	
	One	1/2 second		
Two	1 second			
Auxiliary Output	Zero	Three	1 second	For Electric Strikes: ► Will engage or disengage a jammed lock up to 10 times before an error message reads ERROR_4 ► Select Power Reset to cancel the error message. ► The Strike releases for (3) seconds then re-engages.
	One	Message will read: AUX. OUTPUT 1 ► 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.		
	Two	Message will read: AUX. OUTPUT TIMER 2 ► The sequential door operation option will instruct the relay to close thereby activating a second Slide door for a set time period. It requires selecting the time delay between the first and second Slide door operations. ► The following (4) sub-options are available:		
		Zero	2 seconds	
		One	4 seconds	
		Two	6 seconds	
	Three	8 seconds		
Auxiliary Output (continued)	Three	Message will read: AUX. OUTPUT 3 ► A Relay Signal indicating a fully closed position will be provided. ► Used by the Gyro Tech Access Control Panel or other similar security controls.		
		Zero	1/2 second	Magnetic Lock
		One	1 second	Magnetic Lock
		Two	1/2 second	Electric Strike
		Three	1 second	Electric Strike

Special Function Adjustments	
Adjustment	Description
Power On	Message will read: POWER ON 0 ► Determines 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. ► The following (4) options are available:
	Zero Slide door will slowly reach full closed position and is ready for normal operations.
	One If Slide door is activated while closing slowly, door will slowly reach the full open position and then close.
	Two Slide door will slowly reach the full open position then close.
	Three Slide door stays in manual-open position until activated, then opens slowly and closes.
Manual Opening	Message will read: MANUAL OPEN 0 ► After the Slide door system has been completely set up and operating, a choice is offered on how the door will act if manually opened from the fully closed position. ► The following (4) options are available:
	Zero Slide door will remain in the same position it was manually opened to.
	One When the Slide door is opened manually, it will power open.
	Two After the Slide door has been manually opened, it will slowly close.
	Three Slide door will power close while is being opened manually.
Extended Time Delay	Message will read: EXT. TIME DELAY 7 ► Enables an extended time delay beyond the 0 to 7 seconds standard time delay that was set in the Standard Function Adjustments program. ► Time delay is measured after the loss of the activation signal. ► The following (7) options are available:
Extended Time Delay	Zero Standard 0 to 7 second delay
	One 1 - 10 seconds longer than standard (10-17 seconds)
	Two 2 - 20 seconds longer (20-27 seconds)
	Three 3 - 30 seconds longer (30-37 seconds)
	Four 4 - 40 seconds longer (40-47 seconds)
	Five 5 - 50 seconds longer (50-57 seconds)
	Six 60 seconds longer (60-67 seconds)
	Seven Slide 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	
Adjustment	Description
Maintenance Cnt	Indicates number of times a Handy Terminal has been connected to the Terminal Connector (Records up to 255 connections).
Operation Cnt	► Indicates number of full door operations. ► Updated every 100 door cycles. ► Counter displays up to 6,553,500 cycles.

History Data	
Adjustment	Description
Recycle Cnt	<ul style="list-style-type: none"> ▶ Indicates number of times the Slide door reversed direction after sensing: <ul style="list-style-type: none"> • An object was struck. • The amount of friction that surpassed the recycle sensitivity setting. ▶ Displays up to 255 recycles. ▶ The Recycle Count can be reset by using the Handy Terminal: <ol style="list-style-type: none"> 1. Go to Handy Terminal. Press the Shift buttons to select RECYCLE CNT. 2. Press the L button. <ol style="list-style-type: none"> a. CLR RECYCLE CNT message will automatically be displayed. 3. Select Y and press the ENTRY button. <ol style="list-style-type: none"> a. The Recycle Count will clear.
Run Away Cnt	In the event the CPU operation becomes erratic, a Watchdog Feature is used to reset the CPU. If such a phenomenon happens, the count will increase.

Programming the Extra Function Adjustments	
Adjustment	Description
Signal Input for: Orange 61 on Terminal 3	Message will read: FUNCTION(1) N <ul style="list-style-type: none"> ▶ Determines the normal state of input for Black 61 wire. ▶ Black 61 wire is normally connected to the interior activation sensor. ▶ Y: Activation occurs when circuit is "opened" ▶ N: Activation occurs when circuit is "closed"
Signal Input for: Orange/White 62 on Terminal 8	Message will read FUNCTION(2) N <ul style="list-style-type: none"> ▶ Determines the normal state of the input for the Black/Red 62 wire. ▶ Black/Red 62 wire is normally connected to the exterior activation sensor. ▶ Y: Activation occurs when circuit is "opened" ▶ N: Activation occurs when circuit is "closed"
Signal Input for: White 6B on Terminal 4	Message will read FUNCTION(3) N <ul style="list-style-type: none"> ▶ Determines the normal state of the input for the White 6B wire. ▶ White 6B wire is normally connected to the holding beams. ▶ Y: Activation occurs when circuit is "opened" ▶ N: Activation occurs when circuit is "closed"
Signal Input for: Green/White SLS on Terminal 11	Message will read FUNCTION(4) N <ul style="list-style-type: none"> ▶ Determines the normal state of the input for the Green/White SLS wire. ▶ Green/White SLS wire is used for miscellaneous devices (example: sidelite sensors, emergency switches, etc.) ▶ Y: Activation occurs when circuit is "opened" ▶ N: Activation occurs when circuit is "closed"
Convenience Window Option	Message will read FUNCTION(5) N <ul style="list-style-type: none"> ▶ Sets RECYCLE sensitivity for a Slider Door or a Convenience window. ▶ Y: RECYCLE sensitivity is set for a GT1500 Convenience window (more sensitive) ▶ N: RECYCLE sensitivity is set for a GT1175 Sliding Door
Monitoring Logic	Message will read FUNCTION(6) N <ul style="list-style-type: none"> ▶ Change monitoring Output Logic ▶ Y: Normally Closed ▶ N: Normally Open

Programming the Extra Function Adjustments														
Adjustment	Description													
Back-check Position	Message will read: FUNCTION(11) 0 ► Determines where back-check starts in the opening cycle. ► The following (4) options are available:													
	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.													
Latch-check Position	Message will read FUNCTION(12) 0 ► Determines where latch-check starts in the closing cycle. ► The following (4) options are available:													
	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.													
Miscellaneous Input	Message will read FUNCTION(13) 1 ► Programs Input Terminal # 11 to receive signals from various devices. ► The following Settings (0 - 3) are available:													
	Settings = 1 or 0 Sidelite Sensor ► Indicates to the U30 Microprocessor Control that a Sidelite Sensor is present. Please refer to the Sidelite Sensor Setting chart (option 1 or 0) that defines the Slide door behavior, shown below:													
	<table border="1"> <thead> <tr> <th style="text-align: left;">Function Setting</th> <th style="text-align: left;">Door Position</th> <th style="text-align: left;">Door reaction when Sidelite Sensor is Activated</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Option set to "0"</td> <td>Fully Closed</td> <td>Door stays closed</td> </tr> <tr> <td>Opening</td> <td>Door continues opening</td> </tr> <tr> <td rowspan="2">Option set to "1"</td> <td>Fully Closed</td> <td>Door opens in creep speed</td> </tr> <tr> <td>Opening</td> <td>Door opens in creep speed</td> </tr> </tbody> </table>	Function Setting	Door Position	Door reaction when Sidelite Sensor is Activated	Option set to "0"	Fully Closed	Door stays closed	Opening	Door continues opening	Option set to "1"	Fully Closed	Door opens in creep speed	Opening	Door opens in creep speed
	Function Setting	Door Position	Door reaction when Sidelite Sensor is Activated											
	Option set to "0"	Fully Closed	Door stays closed											
		Opening	Door continues opening											
Option set to "1"	Fully Closed	Door opens in creep speed												
	Opening	Door opens in creep speed												
Miscellaneous Input	Settings = 2 (Used for emergency purposes only) Emergency Close and Lock ► Instructs the U30 Microprocessor Control to immediately close and lock the Slide door (if lock equipped). In that event: <ul style="list-style-type: none"> The Slide door will close at normal speed provided an activation signal is not present on Wires 61, 62 or 6B. If an activation signal is present on Wires 61, 62 or 6B, the Slide door will close at creep speed. ► Once the activation signal is removed from Terminal 11, the Slide door will resume normal operation. ► If the Slide door is already fully closed, it will stay closed.													
	Settings = 3 All Mode Activation ► Instructs the U30 Microprocessor Control to open the Slide door in any Rocker Switch position except OFF. ► The U30 Microprocessor Control will ignore One Way, Two Way, or Night mode settings on the Rocker Switch and open the Slide door.													
Output Timer 2	Message will read FUNCTION(14) 0 ► Output Timer 2 selection is required only when selecting Option 2 on (Auxiliary Output 2). ► The following (4) options are available:													
	Zero 2 seconds													

Programming the Extra Function Adjustments			
Adjustment	Description		
	One	4 seconds	
	Two	6 seconds	
	Three	8 seconds	
SQ Input	FUNCTION(15) 0 ▶ Add option same as "SLS"		
	Zero	Sequential	
	One	-	
	Two	Emergency Close	
	Three	All Mode Activation	
Opening Force	Message will read FUNCTION(16) ▶ Increases Opening Force for a heavy door. ▶ 0 - 3 ▶ Standard - More Torque		
Safety Monitoring On/Off (Input 6B and SLS)	Message will read FUNCTION(17) 1 ▶ Safety related input setting		
	Zero	6B & SLS are not monitoring	
	One	6B is monitored	
	Two	SLS is monitored	
	Three	Both 6B and SLS are monitored	
Activation Monitoring On/Off (Input 61 &62)	Message will read FUNCTION(18)3 ▶ Activation input setting		
	Zero	61 & 62 are not monitored	
	One	61 is monitored	
	Two	62 is monitored	
	Three	Both 61 and 62 are monitored	
Incremental Close Speed Adjustment	Message will read FUNCTION(22) 0 ▶ Ranges are 0 - 7. (Setting 0 has no effect). ▶ Allows close speed to be set in between the Standard Close Speed settings.		
Incremental Open Speed Adjustment	Message will read FUNCTION(21) 0 ▶ Ranges are 0 - 7. (Setting 0 has no effect). ▶ Allows Open speed to be set in between the Standard Open Speed settings found in Standard Function Adjustments. Example Given: After setting up the Slide door, it was found that Open Speed Setting (3) was too slow and open Speed Setting (4) was too fast. It was possible to achieve an open speed setting halfway between 3 and 4 by setting the Incremental open speed FUNCTION (21) to setting 4. Thus allowing the Slide door to open at a speed that was approximately equal to 3.5.		
Auxiliary Output 2	Message will read FUNCTION(23) 3 ▶ Determines 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. ▶ The following (7) options are available:		
	Zero	Signal at Full Open	Transistor will turn ON at the full open position.
	One	Air Lock Option	In a passageway situation, Option (1) instructs the Transistor to turn ON to prevent a second Slide door from opening before the first Slide door reaches the fully closed position.

Programming the Extra Function Adjustments			
Adjustment	Description		
Auxiliary Output 2	Two	Sequential Door Operation	Instructs the Transistor to turn ON thereby sequentially activating a second Slide door for a set time period. This requires adjusting "Output Timer 2" to select the time delay between the first and second door operations. Please see "Output Timer 2" on page <?>.
	Three	Signal at Full Closed	Transistor will turn ON to indicate the Slide door reached a fully closed position.
	Four	Brake Away	The transistor will turn ON if the door is broken out.
	Five	Brake away or Door Open Condition	Transistor will turn ON if: <ul style="list-style-type: none"> ▶ Slide door is broken out ▶ Slide door is not fully closed
	Six	Error Detection	Transistor will turn ON if the U30 Microprocessor Control detects any error except Error 5.
	Seven	Monitoring Output	Turns On/Off Monitoring output signal

Handy Terminal Error Messages			
Error Message	Definition	Problem	Resolution
ROM ERROR	Internal ROM Error: Internal memory error.	Door does not work.	Reset U30 Controller by turning 120 VAC off then on again OR connect Handy Terminal & clear error message.
ERROR RESET AGAIN	Communication Error: Communication between the U30 Microprocessor Control and the 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.
EEPROM ERROR	Internal EEPROM Error: Internal memory error.	Door does not work.	Reset U30 Controller. Turn 120 VAC off, then on. Or connect Handy Terminal & clear error message.
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.	Reset U30 Controller by turning 120 VAC off then on again OR connect Handy Terminal & clear error message OR Turning ON/OFF switch OFF then ON again OR opening then closing panic breakout circuit.
ERROR_5	Recycle Error: Recycle was detected more than three times at same door position continuously.	Door does not recycle.	Reset the U30 Microprocessor Control by turning 120 VAC off then on again OR connect the Handy Terminal and clear the error message OR Turn the 'ON/OFF Switch" OFF then ON again OR open the closing panic breakout circuit.
ERROR_6 (ACUVISION, ACUWAVE, OR ACUSENSOR 1B ONLY)	Interior Sensor Error: Sensor connected to the Black (61) wire is sending an error message to the U30 Microprocessor Control.	Door does not work but the electric lock works by means of a rocker switch.	Replace sensor (only applies to U30 controls with Nabco sensors).
ERROR_7 (ACUVISION, ACUWAVE, OR ACUSENSOR 1B ONLY)	Exterior Sensor Error: Sensor connected to the Black/ Red (62) wire is sending an error message to the U30 Microprocessor Control.	Door does not work but the electric lock works by means of a rocker switch.	Replace sensor (only applies to U30 controls with Nabco sensors).

Handy Terminal Error Messages			
Error Message	Definition	Problem	Resolution
WARNING 2_1	Monitoring Error at 6B	Monitoring Function not working	<ul style="list-style-type: none"> ▶ Refer to the Sensor Manual to troubleshoot the Sensor. If Sensor is the problem: replace the Sensor or Turn OFF the Monitoring Function located on the U30 Controller. ▶ Check wiring. ▶ Check settings located on the U30 Controller
WARNING 2_2	Monitoring Error at SLS		
WARNING 2_3	Monitoring Error at 61		
WARNING 2_4	Monitoring Error at 62		

CHAPTER 8: TROUBLESHOOTING

Notice: If after troubleshooting a problem, a satisfactory solution cannot be achieved, please call Nabco Entrances at 1-877-622-2694 between 8 am – 4:30pm Central time for additional assistance. DO NOT leave any problem unresolved. If the door cannot be repaired immediately, turn off the door and leave it inoperable until repairs can be made. Advise the owner NOT to operate the door in the automatic mode until repairs are effected. NEVER leave a door operating without all safety detection systems operational.

Problem		Solution
Door recycles on its own	Cause	Obstructions during the closing cycle will cause the Slide door to recycle open. Operation should continue as soon as recycling is done.
		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.
	Resolution	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 Microprocessor Control indicates the count for each recycle on the Handy Terminal.
	Cause	Header mounted sensors that are incorrectly adjusted can detect a closing door panel or other moving objects and reopen the door.
	Resolution	Re-adjust motion sensors.
	Cause	Crosstalk between adjacent sensors will cause sensor ghosting and consequent Slide door recycling.
	Resolution	Set different frequency modes for each sensor.
Slide door does not open	Resolution	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.
		Connect the Handy Terminal and push "TEST" to simulate an activation signal.
		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 the Blue wire and determine where the circuit is open. LED indicator (BA) may help.
Door stays open	Cause	Holding Beams or Sensor not operating properly
	Resolution	<ul style="list-style-type: none"> ▶ LED 6B is ON <ul style="list-style-type: none"> • Check to see if Holding Beam module is functioning properly. ▶ LED 61 or 62 is ON <ul style="list-style-type: none"> • Check to see if the corresponding Sensor is functioning properly.
There was a Power Failure	Affect	Power failure lasting less than one second will not affect operation.
		Power failure of one second or more will cause the U30 Microprocessor Control to brake the door fully.
	Outcome	Once power is restored, the U30 Microprocessor Control will operate again. Settings to the Slide door operation will remain in effect.

Problem		Solution
Trouble detected by U30 Microprocessor Control	Cause	For problems indicated within "Table 5-2 Handy Terminal Error Messages" on page 7, the U30 Microprocessor Control will stop the Slide door and memorize the nature of the trouble.
	Resolution	Connect the Handy Terminal for error messages, clear and repair.
	Cause	If the U30 Microprocessor Control does not operate at all.
	Resolution	Check the wiring connections and activation devices. LED indicators on the U30 Microprocessor Control may help.
		Check to ensure there is 120 VAC to the power supply and 20 VAC to the U30 Microprocessor Control.
		Change the U30 Controller or motor.
Handy Terminal buttons or Message Display do not work.	Cause	The unit is too cold.
	Resolution	Bring the unit up to room temperature.
	Cause	Terminal or cable may be defective.
	Resolution	Try using it on another door to determine the defective component.
	Cause	Cable from controller to terminal port is defective.
	Resolution	Replace cable.
Abnormal door operation	Resolution	Check or reset the stroke and check the R-hand/L-hand setting.
		Check Handy Terminal settings.
Message Display does not move from "GYRO TECH HANDY TERMINAL"	Resolution	Ensure rocker switch is set to ON.
		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 the Blue wire and determine where the circuit is open. LED indicator (BA) may help.
		Install jumpers in all exposed blue wire connectors.