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Trash and Linen
Chute System
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Easy-WAVE®
Trash & Linen Chute System Operating Instructions

Easy-Wave® Trash & Linen Chute System Operating Instructions

REVISED: 25-JAN-18

Introduction

The Easy-Wave ® trash & linen chute system is designed to lock out all other intake doors on the trash & linen chute when a door is in use. The Easy-Wave® system's signature feature allows touchless, one-handed operation that unlocks the chute door when a motion sensor is activated. In electric interlock systems, the user then manually opens the door and disposes of their trash or linen, while in pneumatic interlock systems the door automatically opens, allowing the user to deposit their trash or linen with ease. Each Easy-Wave® door is equipped with a motion sensor and an LED window. In systems with a trash sorter, a set of push-buttons allow the user to select a trash sorting option.

The system is equipped with a Master Controller that facilitates overall management of the Easy-Wave® system and any connected devices. The Master Controller contains a monitoring system that streamlines chute maintenance by identifying where service is needed. It can configure the trash & linen chute's responses to open doors, falling trash/linen, and alarm states. It also facilitates the mapping of chute doors to building floor levels and the use of a connected chute washdown system. The Master Controller is equipped with a Lock Out toggle switch and a user interface with a 32 character LCD, an LED window, and two push-buttons. This manual will provide information about the operation of the entire Easy-Wave® trash & linen chute system.

DANGER

GROUNDING INSTRUCTION

This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER – Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

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Specifications

Easy-Wave® Specifications:

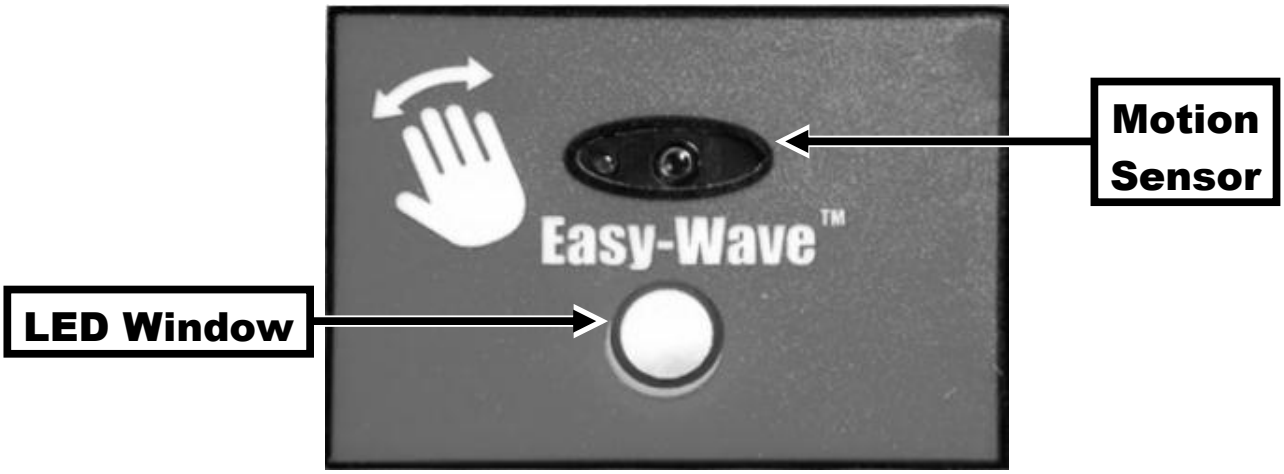
- Low voltage Plug and Play for easy installation.
- Lock Out feature for maintenance.
- System is B.A.S. compatible.
- Sensor-based one-handed operation increases reliability.
- Electrical and pneumatic interlocks may be installed in combination.
- Pneumatic interlocks are completely hands-free and ADA compliant.
- Monitoring system showing real-time chute status streamlines maintenance.
- Chute washdown can be initiated from the Master Controller.
- Optional Real-time Clock Module allows automatic start of chute washdown.

Electrical Specifications:

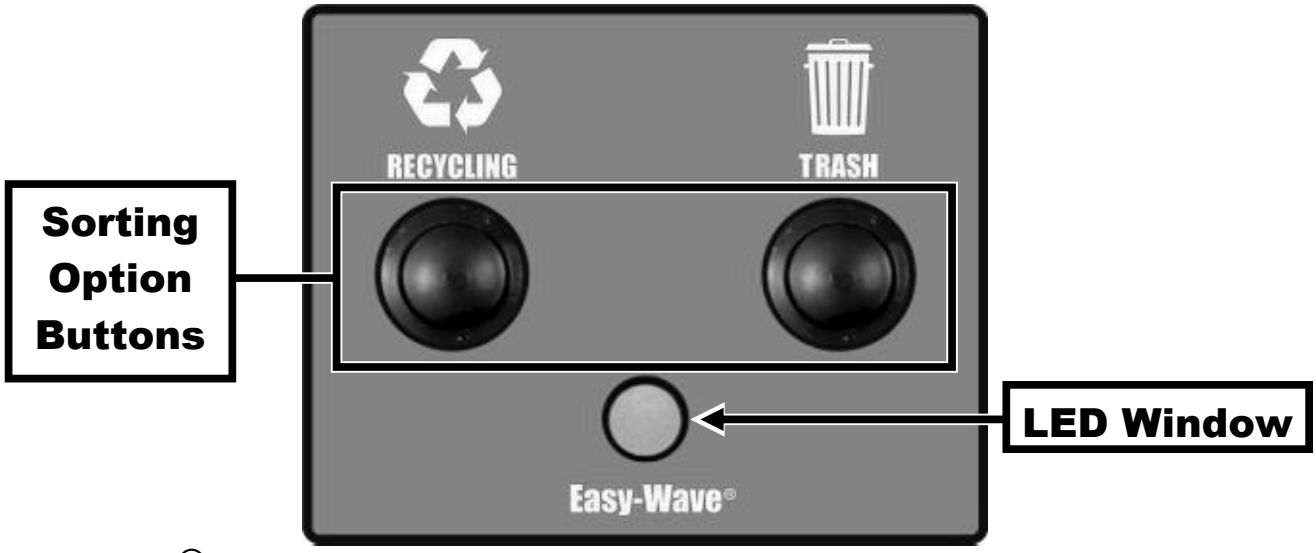
- 100-240 VAC, 50/60 Hz 1.1 Amp service.
- All controls are low voltage.
- All electrical components are UL listed.
- Sensor based operation - no mechanical limit switches to fail or go out of adjustment.
- Master Controller has a 32 character backlit LCD.
- System status is displayed at all times on the Master Controller.

Control Descriptions

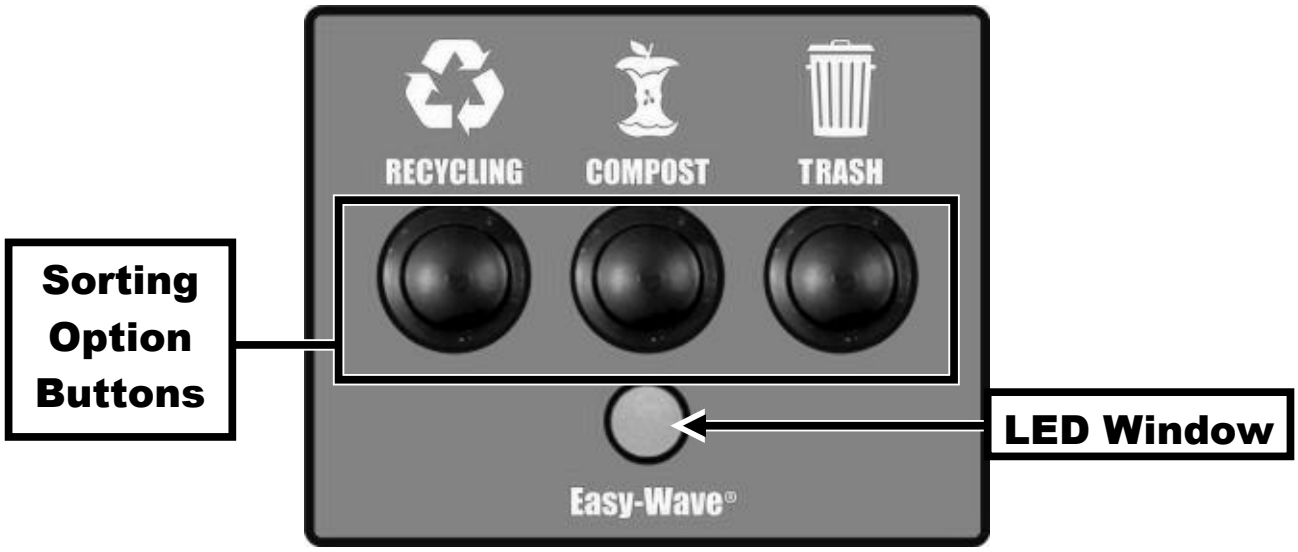
Easy-Wave® Door (standard version):



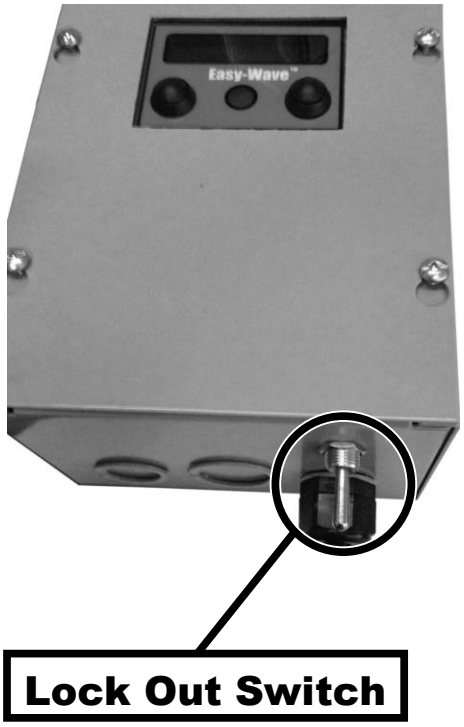
Easy-Wave® Door (trash bi-sorter version):

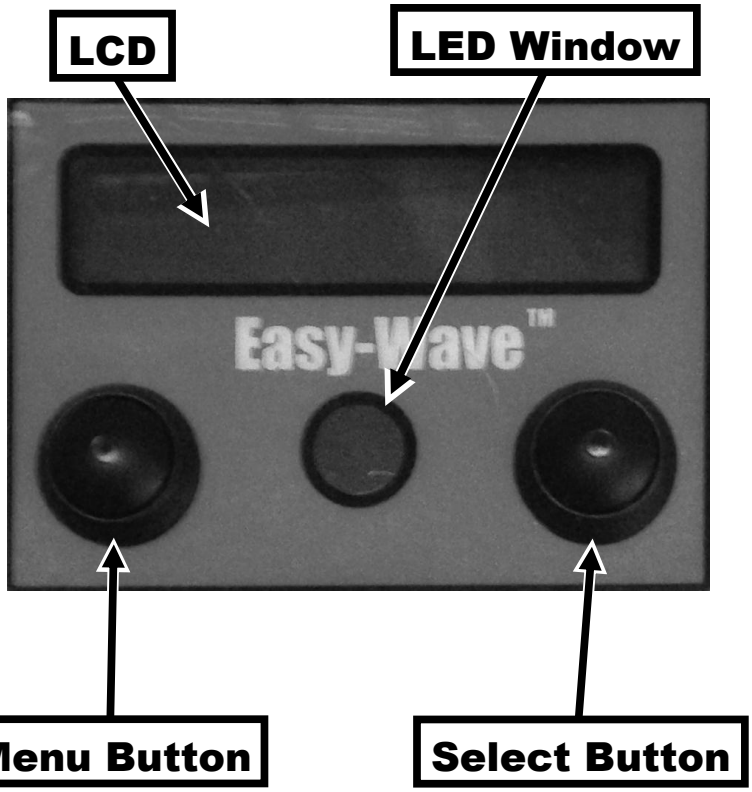


Easy-Wave® Door (trash tri-sorter version):



Easy-Wave® Master Controller:





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Section

1

How to Use an Easy-Wave® Door

Operation of an Easy-Wave® door is simple, and for the most part, hands-free. When the chute is idle, the LED will be **off**. If the LED is lit up **red**, the chute is busy. Usually, this will be because another door is open. The current door cannot be used until the chute becomes idle.

In standard systems (without a trash sorter):

To deposit trash/linen in the chute, wave one hand in front of the motion sensor. The LED will light up **green** and the door will unlock.

In electric interlock systems, pull the door open to deposit the trash. The door will close itself right away.

In pneumatic interlock systems, the door will open automatically. The door will close itself after a few seconds ***(customizable, as described in Section 3)***.

In systems with a trash sorter:

To deposit trash in the chute, select which trash sorting option the trash falls under by pressing the appropriate button. This selection tells the sorter at the base of the trash chute to direct the trash to the appropriate sorting cart or compactor. Trash may be sorted under two or three options, depending on the type of trash sorter equipped to the system.

Once the selection has been made, the LED will light up **yellow** to indicate that the trash sorter is moving to the appropriate selection. The LED will then turn **green** to indicate that the door is unlocked. A new sorting option cannot be selected until the chute door has been opened and closed.

In electric interlock systems, pull the door open to deposit the trash. The door will close itself right away.

In pneumatic interlock systems, the door will open automatically. The door will close itself after a few seconds ***(customizable, as described in Section 3)***.

Tamper Protection:

Easy-Wave® doors are equipped with a tamper protection system that will lock out a door receiving too many instructions. If any button is pressed or the motion sensor is waved at over 4 times within a 90 second period, the tamper lockout is activated. The motion sensor and push-buttons will not respond to any input and the chute door will remain locked. The door will not return to normal operation until it has been left inactive for 90 seconds. This lockout will only affect the door being tampered with – all other doors on the chute will still function normally.

Section

2

Master Controller Basics

The Easy-Wave® Master Controller provides a great deal of functionality, allowing the user to customize the operation of the trash chute and all its doors. This section will describe the basic operation of the Master Controller, and the messages it can provide the user. All following sections detail its functions under service operation.

The Master Controller is operated through the use of its “Lock Out” toggle switch and the “Menu” and “Select” push-buttons. The “Menu” button is on the **left** and the “Select” button is on the **right**.

The majority of the time, the trash chute will be idle. The Master Controller's LED will be **off** and the LCD will display the following message:

CHUTE IDLE
ALL DOORS CLOSED

When any door on the chute is opened, the Master Controller's LED will light up **red**. The LCD's message will change to the following:

OPEN FOR ACCESS
AT LEVEL: 1

This message will be different depending on the floor of the door that is open.

In systems equipped with a trash sorter, the message will also display which sorting option has been selected, as below:

OPEN FOR GARBAGE
AT LEVEL: 1

The message may state either “garbage,” “recycle,” or “compost,” depending on the sorting option selected at the door.

Waiting for Trash to Fall:

(Note: This feature will only function if it is activated in the Master Controller's configuration settings, described in Section 3.)

Once a chute door has been closed, the Easy-Wave® system automatically determines how long it will take for the trash to fall from the selected floor. All chute doors will remain locked until this time has elapsed. During this period, the Master Controller's LED will light up **red** solidly and the message on the LCD will change as below:

WAITING 10 Secs
for Item to Fall

The amount of seconds will count down to zero. Then the LED will turn **off** and the chute will return to its idle state.

Full Trash Cart or Compactor:

(Note: This feature will only function if it is activated in the Master Controller's configuration settings, described in Section 3.)

Some chute systems can be equipped with sensors to detect if any trash carts or compactors are full. In this situation, the sensors communicate this message to the Master Controller, which will lock out the entire trash chute. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
CART IS FULL

The chute cannot resume normal operation until the sensors detect that the cart or compactor is empty.

Full Trash Sorter:

In systems with a trash sorter, that sorter may signal the chute to lock itself out in the event that the sorter detects a full trash cart or compactor. The LED will **flash red** and the message on the LCD will change as below:

REMOTE LOCKOUT
SORTER-FULL

The chute cannot resume normal operation until the trash sorter detects that its cart and/or compactor is empty.

"Door Stuck" Alarm:

If the Master Controller detects that one of the Easy-Wave® chute doors has been left open for an extended period of time, the LED will **flash red** and the message on the LCD will change as below:

DOOR STUCK OPEN
AT LEVEL: 3

This indicates the chute door at the listed floor is open. No other doors on the chute can be opened as a result. That door must be closed for the trash chute to resume operation.

Locking Out the Chute (Service Mode):

If at any time the entire chute must be locked out for maintenance reasons, or to enter the Master Controller's Service Mode, toggle the “Lock Out” switch on the Master Controller to the “Lock Out” position. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
****SERVICE MODE****

Toggling the “Lock Out” switch back to the “Off” position will return the chute to normal operation. The chute cannot be locked out while any chute door is open. Service Mode is detailed in later sections of this manual.

Fire Alarm:

If the fire alarm in the Easy-Wave® trash chute has been triggered, the Master Controller's LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
Alarm Detected

The second line of this message will then change to:

*****FIRE ALARM*****

All necessary procedures for evacuating the building and contacting emergency response personnel should be undertaken.

Viewing the Date and Time:

(Note: this is only possible if the Easy-Wave® Master Controller is equipped with a Real-time Clock Module.)

To view the date and time, press and hold either the “Menu” or “Select” button. The LCD should display something like the following while either button is pressed:

3/14/17 [Tue]
5:40 pm

Section

3

Configuring the Master Controller

The Easy-Wave® Master Controller allows for a great deal of configuration. Using the Configuration Parameters Menu, the user can:

- set the amount of time the chute doors will stay open.
- set how long a chute door must be open before triggering a “door stuck” alarm.
- set how long the chute will remain locked out after a door is shut to allow for falling trash.
- enable or disable the chute washdown system.
- enable or disable input from a trash sorter.
- enable or disable input from cart full sensors.
- enable or disable input from an Easy-Wave® Smart Compactor.
- display the voltage being used by the Master Controller.

To access the Configuration Parameters Menu, lock out the trash chute and enter Service Mode by toggling the “Lock Out” switch to the “Lock Out” position. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
SERVICE MODE

The operation of the Configuration Parameters Menu is accomplished by pressing the “Menu” and “Select” buttons. The “Menu” button is on the **left** and the “Select” button is on the **right**. Press the “Menu” button while in Service Mode until the following message appears on the LCD:

Configuration
Parameters

The LED should now be lit up **solidly**. Press the “Select” button. The LCD should now display the following:

DOOR OPEN dwell
Time (Secs): 12

Pressing the “Menu” button now will cycle through the various options of the Configuration Parameters Menu. When all options have been displayed, the following message will appear:

END OF SECTION

Pressing the “Menu” button again will return to the first option in Service Mode.

Setting the Door Open Dwell Time:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

DOOR OPEN dwell
Time (Secs): 12

This option sets the amount of time, in seconds, that the chute doors will remain open after being unlocked. In electrical interlock systems, the doors remain unlocked for this amount of time, while in pneumatic interlock systems, the door will close after it has been automatically opened for this amount of time. Press the “Select” button to increase the amount of time second by second. This period of time may be set anywhere from 3 to 50 seconds. The default time is 12 seconds.

Setting the “Door Stuck” Alarm Time:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

OPEN DOOR ALARM
Time (Mins): 10

This option sets the amount of time, in minutes, that the chute doors must remain open before triggering a “Door Stuck” alarm ***(described on page 5)***. Press the “Select” button to increase the amount of time minute by minute. This period of time may be set anywhere from 3 to 50 minutes. The default time is 10 minutes.

Setting the Trash Fall Time:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

FALL TIME from
TOP (Secs): 0

This option sets the amount of time, in seconds, that the chute remains locked out after a door is closed to allow for falling trash ***(as described on page 4)***. This period of time is set only for the top floor of the chute ***(which can be set in Section 5).*** The Easy-Wave® Master Controller automatically calculates the fall time for all floors based on this value. Press the “Select” button to increase the amount of time second by second. This period of time may be set anywhere from 0 to 120 seconds. The default time is zero seconds, which disables this feature.

Enabling or Disabling the Washdown System:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

WASHDOWN System
Enabled? false

This option tells the Easy-Wave® Master Controller if the trash chute includes an automatic washdown system. Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “TRUE” enables the Washdown Menu and allows the operation of a chute washdown from the Master Controller ***(both described in Section 6)***.

Enabling or Disabling the Connection to the Cart Full Sensors:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

FULL sensor I/F
Enabled? false

This option tells the Easy-Wave® Master Controller if the cart full or compactor full sensor option is installed. Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “TRUE” lets the Master Controller know the sensors are connected. This connection must be activated for the sensors to function. With this option enabled, the sensors can now communicate a full cart or full compactor alarm to the Master Controller, which will lock out the chute ***(as described on page 4)***. Enabling this option also automatically configures Output #2 at connection J9 for use with the sensors ***(outputs are described in detail in Section 4)***.

Enabling or Disabling the Connection to the Trash Sorter:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

SORTER Connect
Enabled? false

This option tells the Easy-Wave® Master Controller if the trash sorter is connected to it. Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “TRUE” prepares the Master Controller to interface with the trash sorter. If the sorter requires that the chute be locked out for any reason, now the Master Controller will expect such a signal and relay it to the doors. The Master Controller will now relay sorting signals from the trash chute doors to the trash sorter.

Enabling or Disabling the Connection to the Smart Compactor:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

COMPACT Connect
Enabled? false

This option tells the Easy-Wave® Master Controller if the Easy-Wave® Smart Compactor is connected to it. Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “TRUE” lets the Master Controller know the Smart Compactor is connected. With this option enabled, the Smart Compactor can now communicate to the Master Controller.

Displaying the Power Supply:

While in the Configuration Parameters Menu, press the “Menu” button until the following message appears on the LCD:

Power Supply
Volts: 28

This is a simple diagnostic display indicating the voltage being used by the Master Controller. The amount should be approximately 28 volts at all times.

Section

4

Setting Output Signals

The Easy-Wave® Master Controller is equipped with two output connections, shown on the LCD as “Out #1” and “Out #2.” These outputs send simple “on” and “off” signals, useful for controlling a peripheral device with information from the trash chute. ***(Note: when cart full or compactor full sensors are connected and enabled in the Master Controller, Output #2 is automatically dedicated to sending signals based on their status.)*** Using the Output Menus, the user can:

- set which signal each output will send when activated: “on” or “off.”
- set if each output will be activated in the event of a fire alarm.
- set if each output will be activated in the event of a “door stuck” alarm.
- set if each output will be activated when the trash chute is busy.
- set if each output will be activated in the event of a trash sorter error.

To access the Output Menus, lock out the trash chute and enter Service Mode by toggling the “Lock Out” switch to the “Lock Out” position. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
****SERVICE MODE****

The operation of the Output Menus is accomplished by pressing the “Menu” and “Select” buttons. The “Menu” button is on the **left** and the “Select” button is on the **right**. Press the “Menu” button while in Service Mode until the following message appears on the LCD:

Set Out #1 (J8)
Parameters.

The LED should now be lit up **solidly**. Pressing the “Menu” button again will change the message to:

Set Out #2 (J9)
Parameters.

Pressing the “Select” button during either of the above two displays will bring up the Output Menu for the selected output, either #1 or #2. “J8” and “J9” indicate the connections in the schematic which provide the signal from each output ***(refer to page 34)***. After pressing the “Select” button on either Output Menu, the LCD should now display the following:

Out #1-Active
State=OFF: false

Pressing the “Menu” button now will cycle through the various options of the selected Output Menu. When all options have been displayed, the following message will appear:

END OF SECTION

Pressing the “Menu” button again will return to the first option in Service Mode.

Setting the Output Signal when Activated:

While in the Output Menu, press the “Menu” button until the following message appears on the LCD:

Out #1-Active
State=OFF: false

This option sets which signal the output will send when it is activated by the Master Controller. This signal can be either “on” or “off.” Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “false” lets the Master Controller know to send an “on” signal when the selected output is activated. Setting this option to “TRUE” lets the Master Controller know to send an “off” signal when the selected output is activated.

Setting the Output State in the Event of a Fire Alarm:

While in the Output Menu, press the “Menu” button until the following message appears on the LCD:

Out #1-Active for
Fire Alarm:TRUE

This option sets if the output will be activated when the Master Controller detects a fire alarm from the trash chute ***(described on page 6)***. Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “TRUE” activates the output during a fire alarm. The default setting for this option on Output #1 is “TRUE,” while on Output #2 it is “false.”

Setting the Output State in the Event of a "Door Stuck" Alarm:

While in the Output Menu, press the "Menu" button until the following message appears on the LCD:

Out #1-Active for
Door Alarm:false

This option sets if the output will be activated when the Master Controller detects a "door stuck" alarm from the trash chute ***(described on page 5)***. Press the "Select" button to change the status between "false" and "TRUE." Setting this option to "TRUE" activates the output during a "door stuck" alarm. The default setting for this option on both outputs is "false."

Setting the Output State While the Chute is Busy:

While in the Output Menu, press the "Menu" button until the following message appears on the LCD:

Out #1-Active for
Chute Busy:false

This option sets if the output will be activated whenever the chute is busy. This could be because a door is in use, because the system is waiting for trash to fall, because the "Lock Out" switch has been toggled to the "Lock Out" position, or because the chute is going through a washdown procedure. Press the "Select" button to change the status between "false" and "TRUE." Setting this option to "TRUE" activates the output while the chute is busy. The default setting for this option on Output #1 is "false," while on Output #2 it is "TRUE."

Setting the Output State in the Event of a Trash Sorter Error:

While in the Output Menu, press the “Menu” button until the following message appears on the LCD:

Out #1-Active for
Sorter Err:false

This option sets if the output will be activated when the Master Controller detects an error message from the connected trash sorter. Press the “Select” button to change the status between “false” and “TRUE.” Setting this option to “TRUE” activates the output when a trash sorter error is detected. The default setting for this option on both outputs is “false.”

Section

5

Mapping Doors to Floors

The Easy-Wave® Master Controller allows the user to map every door on the trash chute to the floor level of the building on which it is located. This provides a great deal of clarity when reading messages about which door is open or stuck. It also helps the Master Controller understand the distance from the top of the trash chute to the bottom so that it can calculate trash fall times ***(as described on page 4)***. Using the Mapping Menu, the user can:

- reset the Door to Floor Level Map.
- set the floor level of the topmost trash chute door.
- set the floor level of the bottom of the trash chute.
- set the floor level of each individual door on the trash chute.

To access the Mapping Menu, lock out the trash chute and enter Service Mode by toggling the “Lock Out” switch to the “Lock Out” position. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
****SERVICE MODE****

The operation of the Mapping Menu is accomplished by pressing the “Menu” and “Select” buttons. The “Menu” button is on the **left** and the “Select” button is on the **right**. Press the “Menu” button while in Service Mode until the following message appears on the LCD:

Set the DOOR to FLOOR LEVEL map

The LED should now be lit up **solidly**. Pressing the “Select” button will bring up the Mapping Menu. The LCD should now display the following:

RESET Door to Floor Map?

Pressing the “Menu” button now will cycle through the various options of the Mapping Menu. When all options have been displayed, the following message will appear:

END OF SECTION

Pressing the “Menu” button again will return to the first option in Service Mode.

About Floor Mapping:

The Easy-Wave® Master Controller recognizes up to 100 floor levels. These can be anywhere from nine basement floors through a ground floor and up to 100 floors above ground level. When mapping doors to floors, keep in mind the following floor plan:

100	
...	
1	above
G	ground
B1	basement
...	
B9	

Resetting the Door to Floor Level Map:

While in the Mapping Menu, press the “Menu” button until the following message appears on the LCD:

RESET Door to
Floor Map?

This option allows the user to clear any previously entered door mapping data and revert the system to its default state, which is to assume the chute doors are all placed on consecutive floors (door 1 is on floor 1, etc.). Pressing and **holding** the “Select” button for **five seconds** will reset the data. The following message will then display:

Map has been
RESET

After a pause, the display will return to the Mapping Menu.

Setting the Floor Level of the Top Chute Door:

While in the Mapping Menu, press the “Menu” button until the following message appears on the LCD:

TOP FLOOR on the
Chute: 20

This option sets the floor level on which the topmost trash chute door is located. Pressing the “Select” button will increase the floor number indicated by one step. This can be set to any value between G(0) and 100. Setting this value helps the Master Controller determine the fall time of trash being dropped into the chute from every floor level. The default top floor is 20.

Setting the Floor Level of the Bottom of the Trash Chute:

While in the Mapping Menu, press the “Menu” button until the following message appears on the LCD:

BOTTOM of Chute
is on FLOOR: G

This option sets the floor level on which the bottom of the trash chute is located. This is not the bottom-most door on the trash chute, but rather the exit point of the trash chute, where it feeds into any associated trash sorter, bins, and/or compactors. Pressing the “Select” button will increase the floor number indicated by one step. This can be set to any value between B9 and the top floor. Setting this value helps the Master Controller determine the fall time of trash being dropped into the chute from every floor level. The default floor level is G.

Setting the Floor Level of Each Trash Chute Door:

While in the Mapping Menu, press the “Menu” button until the following message appears on the LCD:

DOOR number: 1
FLOOR LEVEL: 1

This option sets the floor level for each individual trash chute door. This is useful in situations where there is no door on a certain level, or where the numbers of the doors do not correspond to the floor levels on which they are located. Pressing the “Menu” button advances the door number by one step. Pressing the “Select” button advances the floor level number by one step. This can be set to any value between the top chute door and the bottom of the trash chute, as set in previous options. Up to eight gaps in the numbering of the doors may be programmed into the system.

Section

6

Using the Washdown System

The Easy-Wave® Master Controller allows the user to run the trash chute's connected washdown system both manually and automatically. To activate this feature it is first necessary to connect the washdown system to the Master Controller and then enable the input from the washdown system as described in Section 3. Once that is done, the Washdown Menu will be enabled. Using the Washdown Menu, the user can:

- manually start a chute washdown procedure.
- set the length of time of each washdown cycle.
- set specific days and times to automatically perform a washdown procedure ***(Note: this is only possible if the Easy-Wave® Master Controller is equipped with a Real-time Clock Module)***.

To access the Washdown Menu, lock out the trash chute and enter Service Mode by toggling the "Lock Out" switch to the "Lock Out" position. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
****SERVICE MODE****

The operation of the Washdown Menu is accomplished by pressing the “Menu” and “Select” buttons. The “Menu” button is on the **left** and the “Select” button is on the **right**. Press the “Menu” button while in Service Mode until the following message appears on the LCD:

WASH DOWN System

The LED should now be lit up **solidly**. Pressing the “Select” button will bring up the Washdown Menu. The LCD should now display the following:

START WASHDOWN:
LOCK OUT to OFF

Pressing the “Menu” button now will cycle through the various options of the Washdown Menu. When all options have been displayed, the following message will appear:

END OF SECTION

Pressing the “Menu” button again will return to the first option in Service Mode.

Performing a Manual Washdown Procedure:

While in the Washdown Menu, press the “Menu” button until the following message appears on the LCD:

START WASHDOWN:
LOCK OUT to OFF

This option allows the user to manually begin a washdown procedure. Toggling the “Lock Out” switch back to the “Off” position will begin the washdown as programmed. It is recommended that any connected trash sorter be set to its “Garbage” sorting option prior to running a washdown procedure.

During a Washdown:

When the washdown system of the trash chute is operating, all doors on the chute will lock. The Master Controller's LED will light up **red** solidly and the message on the LCD will change as below:

WASH unit Found
SOAP level GOOD

This message indicates that the washdown procedure is about to begin. The message on the second line of the LCD indicates the level of soap in the wash system. If the soap level is low, the message will read:

WASH unit Found
*****SOAP LOW*****

The soap should be replenished as soon as possible if this is the case.

Shortly, the message will change again to display which cycle the washdown procedure is in. The LCD will display the following:

WASH Cycle
Time: 0:55

The washdown procedure has four cycles, “Wash,” “Soak,” “Rinse,” and “Dry.” The first word of this message will change to indicate which cycle is currently in effect. The time remaining in the cycle is displayed in minutes and seconds, and will count down to zero.

Again, if the soap level in the wash system is detected to be low, the LCD will indicate this during the cycle with a message like the one below:

WASH *SOAP LOW*
Time: 0:55

Replenish the soap as soon as possible.

It is possible to cancel a chute washdown at any time while it is running. To do so, toggle the "Lock Out" switch to the "Lock Out" position. The LCD will display the following message:

Press SELECT to Cancel WASHDOWN

To avoid canceling the washdown, toggle the "Lock Out" switch back to the "Off" position. Pressing the "Select" button at this time will immediately disengage the washdown system. The LCD will then display the following message:

WASH DOWN cycle CANCELLED!

Toggle the "Lock Out" switch back to the "Off" position to return the chute to normal operation.

Setting the Duration of Each Washdown Cycle:

While in the Washdown Menu, press the "Menu" button until the following message appears on the LCD:

Set WASH Cycle times

This option allows the user to adjust the duration of each cycle of the washdown procedure: Wash, Soak, Rinse, and Dry.

- The "Wash" cycle dispenses soapy water down the walls of the trash chute. The system will dispense clear water only if the soap container is empty.

- The "Soak" cycle is a pause allowing the soap solution dispensed during the "Wash" cycle to fully coat the walls of the trash chute. The soap may activate during this time to remove residue and destroy bacteria.

- The "Rinse" cycle dispenses clear water only down the walls of the trash chute, rinsing

away the soap solution and dirt.

- The “Dry” cycle is a pause allowing the interior of the trash chute to dry before it may resume normal operation.

Use the following recommended cycle times based on the height of the trash chute:

Floors:	WASH time:	SOAK time:	RINSE time:	DRY time:
5	0:30	1:00	0:30	0:30
10	1:00	1:00	1:00	1:00
20	2:00	1:00	2:00	2:00
30	3:00	1:00	3:00	3:00
40	4:00	1:00	4:00	4:00
50	5:00	1:00	5:00	5:00

Pressing the “Select” button will change the message on the LCD to the following:

WASH Cycle
Time (Min): 2:00

This indicates the cycle currently being altered and the duration in minutes and seconds that it is set to last. Pressing the “Menu” button will change the cycle being altered between “WASH,” “SOAK,” “RINSE,” and “DRY.” Pressing the “Select” button will increase the duration of the selected cycle in 15-second increments. Each cycle can be set to any duration from zero to 30 minutes. Setting a cycle to a zero-minute duration will prevent it from running at all. The default times for each cycle are:

- Wash: 2 minutes.
- Soak: 1 minute.
- Rinse: 2 minutes.
- Dry: 2 minutes.

When all options have been displayed, the following message will appear:

END OF SECTION

Pressing the “Menu” button again will return to the first option in the menu.

Programming Automatic Washdown Procedures:

(Note: this is only possible if the Easy-Wave® Master Controller is equipped with a Real-time Clock Module.)

While in the Washdown Menu, press the “Menu” button until the following message appears on the LCD:

Set Automatic
WASHDOWN times.

This option allows the user to program multiple automatically-initiated washdown procedures for the trash chute. Pressing the “Select” button changes the message on the LCD to the following:

Sun Wash Time:
OFF

Pressing the “Menu” button changes the day of the week being programmed. Pressing the “Select” button changes the time of day the washdown procedure will begin, in 15-minute increments. Times begin at 12:00 AM and advance through 11:45 PM before reverting to the default “OFF” setting. For example, the following screen will display when setting the washdown time on Thursdays to 3:15 PM:

Thu Wash Time:
3:15 P

Only one washdown procedure may be scheduled per day, for a total of seven possible procedures scheduled during a week.

Setting the Real-Time Clock Module:

(Note: this is only possible if the Easy-Wave® Master Controller is equipped with a Real-time Clock Module.)

While in the Washdown Menu, press the "Menu" button until the following message appears on the LCD:

Set DATE & TIME

This option allows the user to set the current date and time in the Real-Time Clock Module. This then enables the Master Controller to be programmed for automatic washdown procedures. Pressing the "Select" button changes the message on the LCD to the following:

SET MONTH
3/14/17 8:34 P

Pressing the "Menu" button changes the parameter being set between "MONTH," "DAY," "YEAR," "HOUR," and "MINUTE." Parameters are set using the MM/DD/YY date format and a 12-hour time format. Pressing the "Select" button advances the selected parameter by one step. When the minute is set, the internal seconds clock automatically resets to zero. Once the Date & Time are set, they can be readily viewed under normal operation by pressing either the "Menu" or the "Select" button ***(as described on page 6)***.

Section

7

Viewing Diagnostic Statistics

The Easy-Wave® Master Controller allows the user to view numerous statistics on trash chute usage, and the alarms and errors encountered by the system during its operation. Using the Alarms Menu, the user can:

- view and reset the number of fire alarms detected by the system.
- view and reset the number of “door stuck” alarms detected by the system.
- view and reset the number of voltage alarms detected by the system.
- view and reset the number of washdown system alarms detected by the system.
- view and reset the number of trash sorter alarms detected by the system.
- view and reset the number of trash compactor alarms detected by the system.

And by using the Door Cycles Menu, the user can:

- view and reset the number of times each trash chute door has been opened.

To access the either menu, lock out the trash chute and enter Service Mode by toggling the "Lock Out" switch to the "Lock Out" position. The LED will **flash red** and the message on the LCD will change as below:

CHUTE LOCKED OUT
SERVICE MODE

The operation of these menus is accomplished by pressing the "Menu" and "Select" buttons. The "Menu" button is on the **left** and the "Select" button is on the **right**.

To access the Alarms Menu, press the "Menu" button while in Service Mode until the following message appears on the LCD:

View the Alarm Statistics

The LED should now be lit up **solidly**. Pressing the "Select" button will bring up the Alarms Menu. The LCD should now display the following:

Fire Alarms: 0

Pressing the "Menu" button now will cycle through the various options of the Alarms Menu.

To access the Door Cycles Menu, press the "Menu" button while in Service Mode until the following message appears on the LCD:

View Door Cycle Counters.

The LED should now be lit up **solidly**. Pressing the "Select" button will bring up the Door Cycles Menu. The LCD should now display the following:

Floor Level: 1
Cycles: 0

Pressing the “Menu” button now will cycle through the various options of the Door Cycles Menu.

When all options have been displayed in either menu, the following message will appear:

END OF SECTION

Pressing the “Menu” button again will return to the first option in Service Mode.

Viewing and Resetting the Number of Fire Alarms:

While in the **Alarms Menu**, press the “Menu” button until the following message appears on the LCD:

Fire Alarms: 3

This displays the number of fire alarms detected by the Master Controller since the last reset. Pressing and **holding** the “Select” button for **five seconds** will reset the data. The following message will then display:

Clear Statistics
for Fire Alarm?

Pressing the “Select” button will clear the statistics. Pressing the “Menu” button will return the display to the Alarms Menu.

Viewing and Resetting the Number of "Door Stuck" Alarms:

While in the **Alarms Menu**, press the "Menu" button until the following message appears on the LCD:

Door Alarms: 7
Lvl: 3,5,9

This displays the number of "door stuck" alarms detected by the Master Controller since the last reset, and the floor levels of the last three alarms that were detected. Pressing and **holding** the "Select" button for **five seconds** will reset the data. The following message will then display:

Clear Statistics
for Door Alarm?

Pressing the "Select" button will clear the statistics. Pressing the "Menu" button will return the display to the Alarms Menu.

Viewing and Resetting the Number of Voltage Alarms:

While in the **Alarms Menu**, press the "Menu" button until the following message appears on the LCD:

Volt Alarms: 3

Lvl: 1,8,8

This displays the number of voltage alarms detected by the Master Controller since the last reset, and the floor levels of the last three alarms that were detected. A voltage alarm does not lock out the trash chute, but instead indicates that one of the chute doors is not receiving enough power to its control unit. This is an issue that requires maintenance. ***(Note: Maintenance of equipment should only be undertaken by qualified, trained personnel.)***

Pressing and **holding** the “Select” button for **five seconds** will reset the data. The following message will then display:

Clear Statistics for Volt Alarm?

Pressing the “Select” button will clear the statistics. Pressing the “Menu” button will return the display to the Alarms Menu.

Viewing and Resetting the Number of Washdown Alarms:

While in the **Alarms Menu**, press the “Menu” button until the following message appears on the LCD:

Wash Alarms: 2

This displays the number of communications errors between the Master Controller and the connected trash chute washdown system. If there is a significant number of these errors, maintenance of the system is required. ***(Note: Maintenance of equipment should only be undertaken by qualified, trained personnel.)***

Pressing and **holding** the “Select” button for **five seconds** will reset the data. The following message will then display:

Clear Statistics for Wash Alarm?

Pressing the “Select” button will clear the statistics. Pressing the “Menu” button will return the display to the Alarms Menu.

Viewing and Resetting the Number of Trash Sorter Alarms:

While in the **Alarms Menu**, press the “Menu” button until the following message appears on the LCD:

Sort Alarms: 1

This displays the number of alarms sent to the Master Controller by the connected trash sorter. For an explanation of trash sorter alarms, refer to the manual for the appropriate trash sorter model. Pressing and **holding** the “Select” button for **five seconds** will reset the data. The following message will then display:

Clear Statistics
for Sort Alarm?

Pressing the “Select” button will clear the statistics. Pressing the “Menu” button will return the display to the Alarms Menu.

Viewing and Resetting the Number of Trash Compactor Alarms:

While in the **Alarms Menu**, press the “Menu” button until the following message appears on the LCD:

Comp. Alarms: 1

This displays the number of alarms sent to the Master Controller by the connected trash compactor. For an explanation of trash compactor alarms, refer to the manual for the appropriate trash compactor model. Pressing and **holding** the “Select” button for **five seconds** will reset the data. The following message will then display:

Clear Statistics
for Comp. Alarm?

Pressing the “Select” button will clear the statistics. Pressing the “Menu” button will return the display to the Alarms Menu.

Viewing and Resetting the Number of Door Cycles at Each Level:

While in the **Door Cycles Menu**, press the "Menu" button until the following message appears on the LCD:

Floor Level: 1
Cycles: 0

This displays the number of times the trash chute door at the listed floor level has been opened since the last reset. Pressing the "Menu" button will advance the floor level by one step. Pressing and **holding** the "Select" button for **five seconds** at any floor level will reset the data for that level. The following message will then display:

Zero Counter at
Level: 19?

Pressing the "Select" button will clear the statistics. Pressing the "Menu" button will return the display to the Door Cycles Menu.

Section

8

Basic Maintenance

The Easy-Wave® trash chute system requires minimal routine maintenance. Establish a set of weekly and quarterly maintenance checks to ensure the system remains in proper working order.

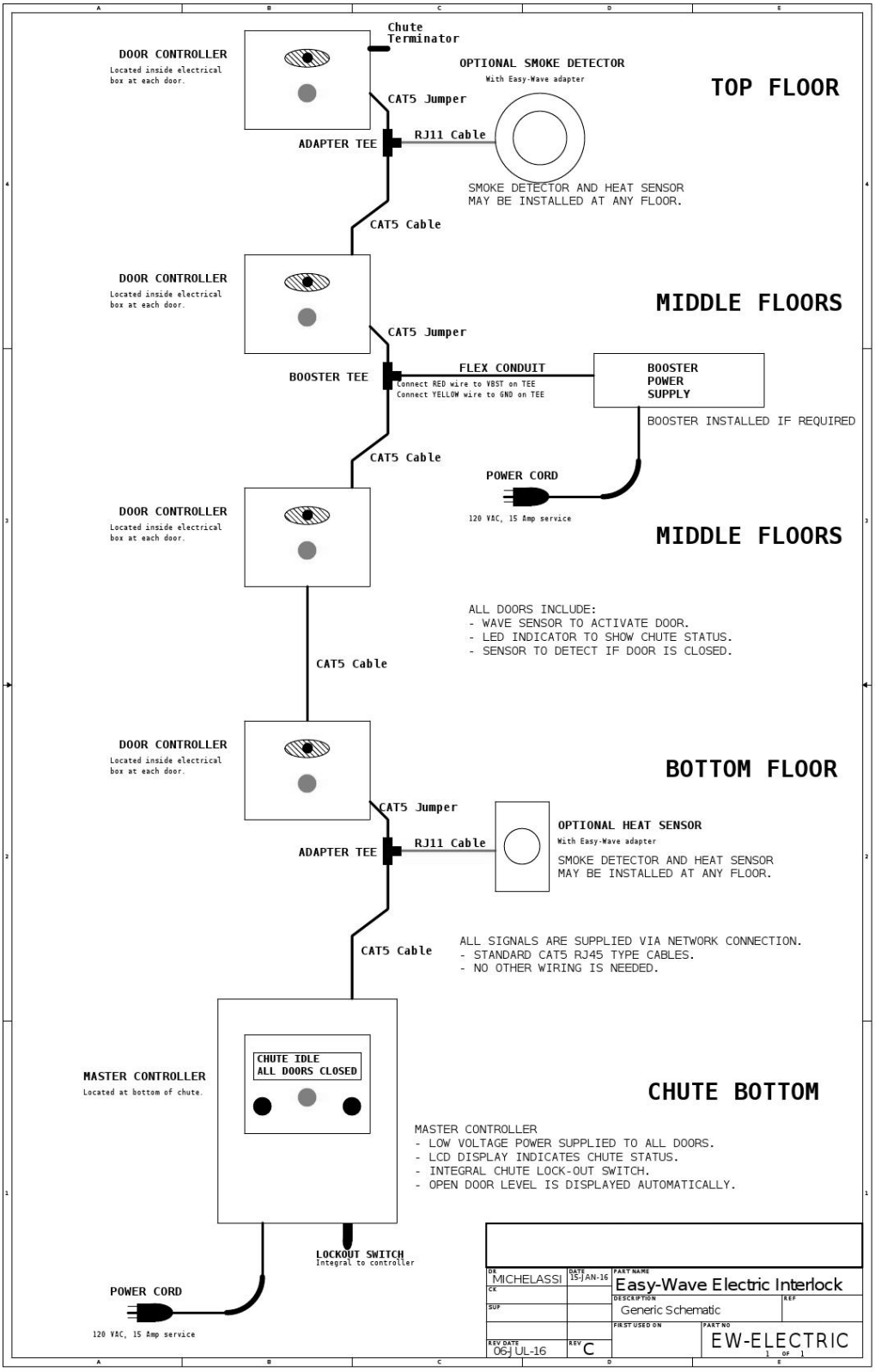
On a weekly basis, inspect each Easy-Wave® chute door and its handle for any physical damage. Also, check the cart full sensors and their associated reflectors on the trash sorter to make sure they are clean and unobstructed.

On a quarterly basis, lubricate all the hinges on the Easy-Wave® chute doors. Basic hinge/joint lubricant will suffice. Ensure that every Easy-Wave® chute door's hinge area is free of debris, and check that each door opens and closes smoothly.

When a chute washdown procedure is about to be performed, select the "garbage" sorting option on the trash sorter to ensure that washdown effluent flows into the appropriate drain.

For more in-depth servicing of errors, faults, and mechanical failures, contact a qualified and trained American Chute maintenance expert.

Schematics


Chute Terminator
DOOR CONTROLLER
Located inside electrical box at each door.
OPTIONAL SMOKE DETECTOR
With Easy-Wave adapter
TOP FLOOR
CAT5 Jumper
RJ11 Cable
ADAPTER TEE
SMOKE DETECTOR AND HEAT SENSOR MAY BE INSTALLED AT ANY FLOOR.
CAT5 Cable
DOOR CONTROLLER
Located inside electrical box at each door.
MIDDLE FLOORS
CAT5 Jumper
FLEX CONDUIT
BOOSTER TEE
Connect RED wire to VBST on TEE
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BOOSTER INSTALLED IF REQUIRED
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120 VAC, 15 Amp service
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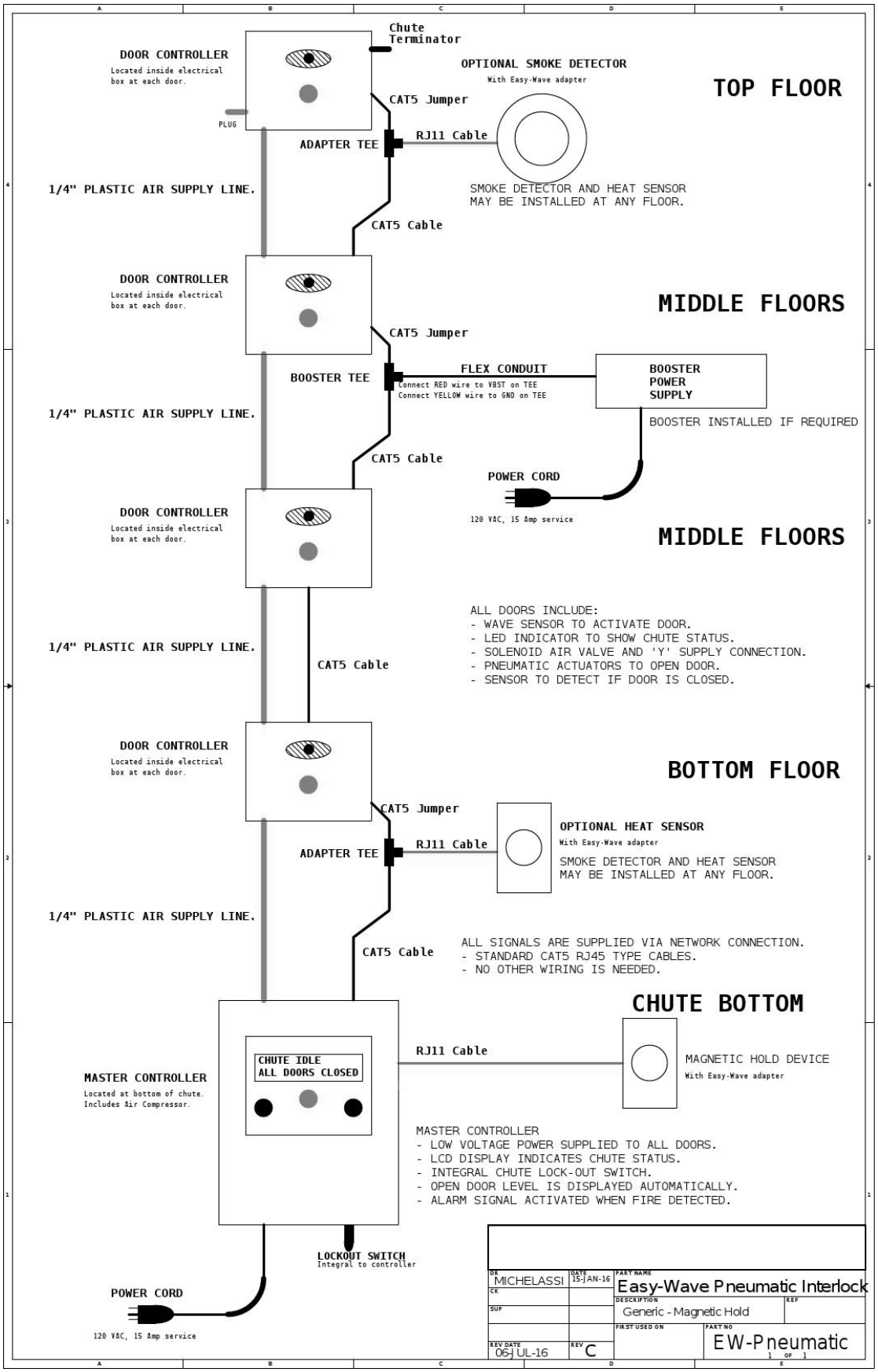
DR MICHELASSI
DATE 15-JAN-16
CK
SUP
REV DATE 06-JUL-16
REV C
PART NAME Easy-Wave Electric Interlock
DESCRIPTION Generic Schematic
REF
FIRST USED ON
PART NO EW-ELECTRIC
1 OF 1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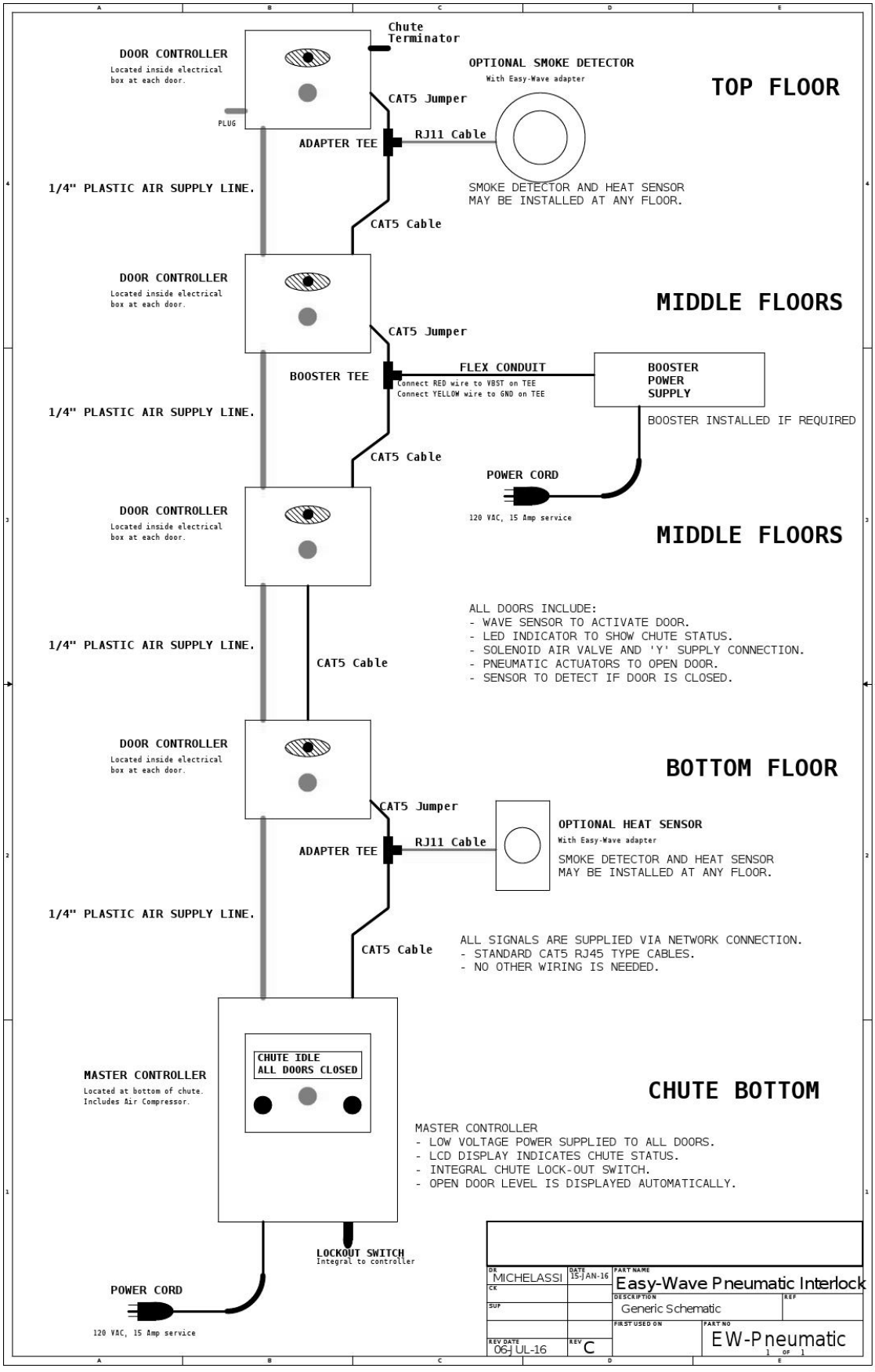
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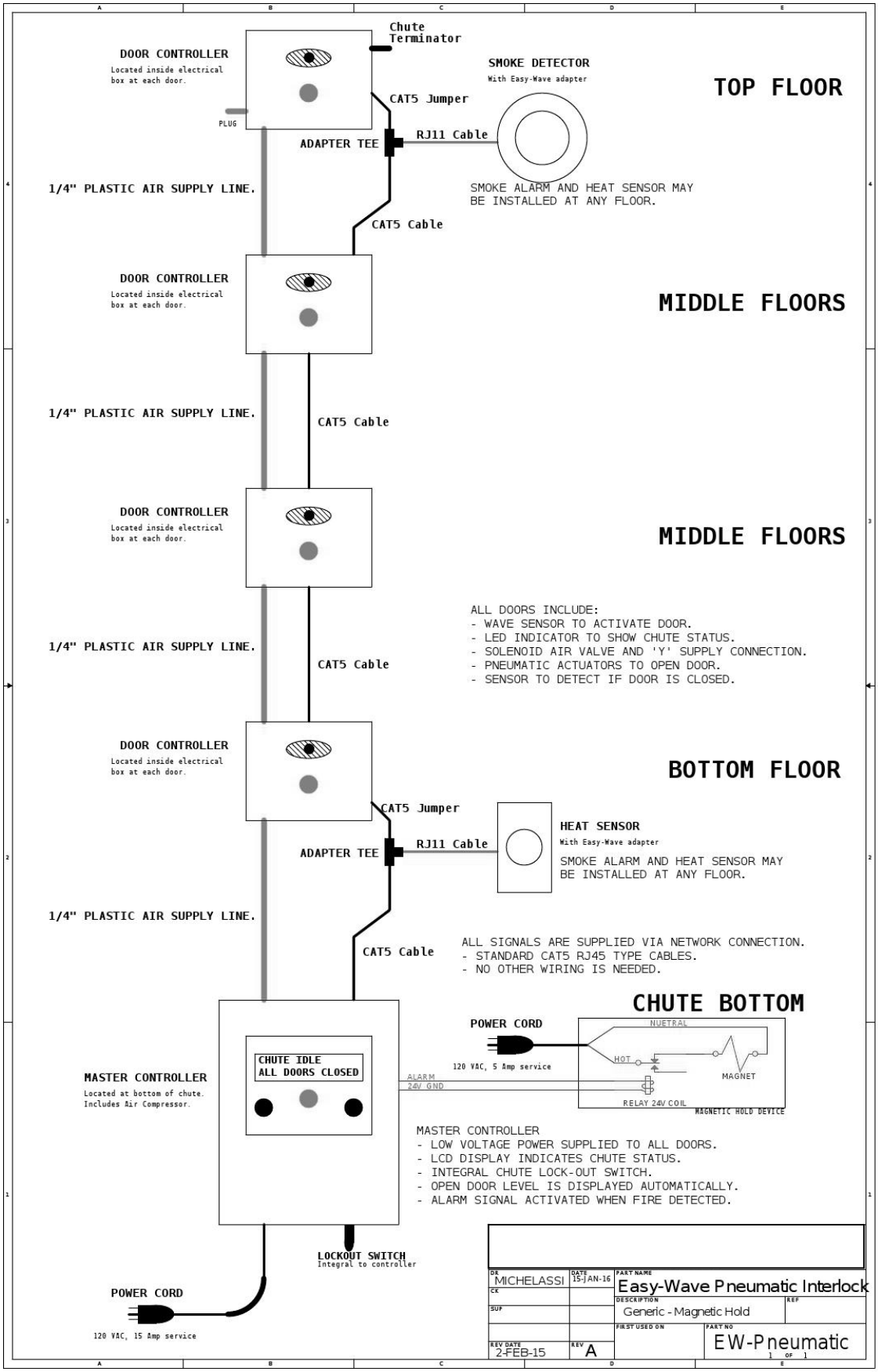
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NUETRAL
HOT
MAGNET
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ALARM
24V GND
RELAY 24V COIL
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