REDD™ MOTOR SYSTEM

InstallationManual

Specifications

Supply Power - 110 Volt AC, Single Phase, 6 Amps, 60 Hz.

Motor Rating - 1 HP

Accessory Power - 24 Volt

Gearbox Reduction - 39.36:1

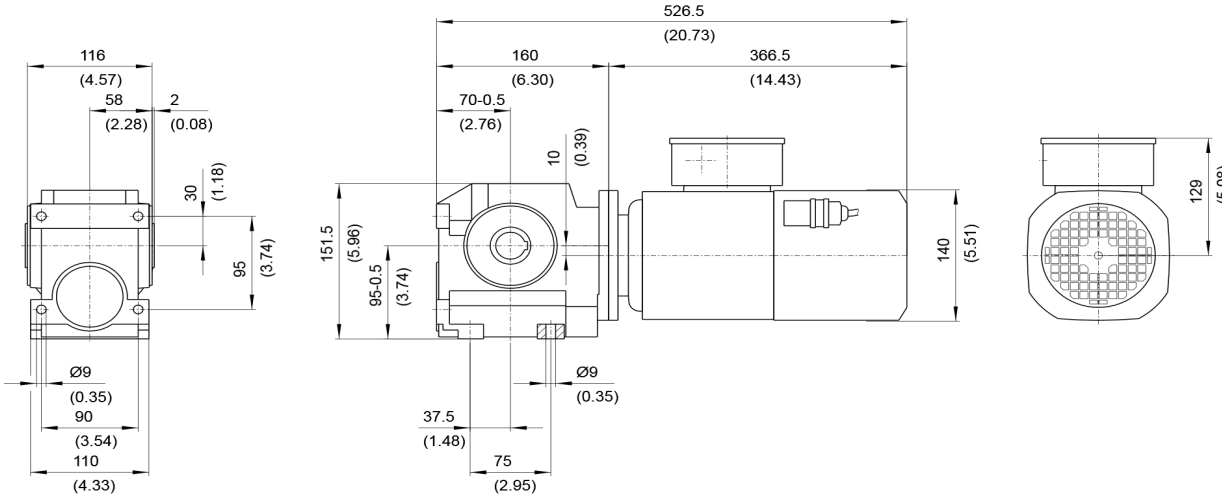
Output Shaft Speed - 43 RPM

Gearbox Oil - CLP VG680 Mineral-oil

Output Shaft Size - 1” (25.4mm)

Operating Temperature Range - -15° F to 100°F

Motor Weight - 33 lbs. (14.96 Kg)



Important Safety Notes:

- Ensure that door system is properly installed and balanced prior to connecting and programming the motor system. Improper door balance will prevent proper motor operation and adversely effect motor safety systems.
- Photo Eyes provided must be connected and installed prior to programming motor system.
- Touch Screen and/or control station must be connected to motor control panel prior to programming limits and commissioning motor.
- Only install motor per orientation provided in project shop drawings or as described in this manual. Any other orientations are not permitted and will reduce motor life expectancy.

Tools Necessary to Perform Installation:

- Drill Motor
- Screwdriver - Flat Tip and Philips
- Socket Set and Ratchet
- Wrench Set
- Allen wrench Set
- Diagonal Cutters
- Wire Stripper

Parts Inventory

Provided below is a list of items included with the motor system:

(1) Motor Head and Gearbox Assembly
(1) REDD Control Unit
(1) Set of Fraba Photo Eyes
(2) Touchscreen Wall Control Panel
(3) Motor wall mount bracket
(4) Wire harness control panel to motor encoder
(6) 1” ID shaft collars
(1) 1/4” x 3” Shaft Key

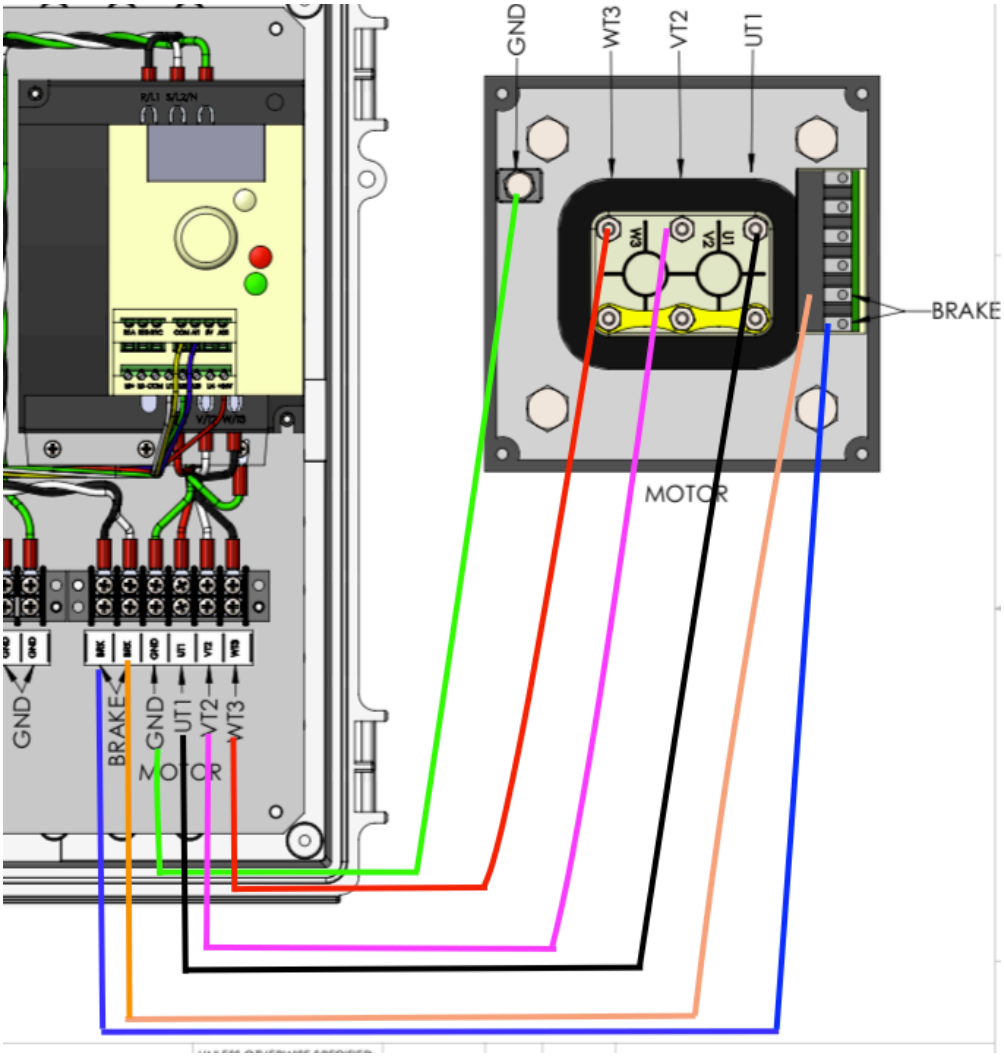
Wiring of the REDD Motor

STEP 1: Wiring the motor The Colors below in the illustration do not match the colors in the wiring harness

There is a 6 wire 14 awg wiring harness in the box

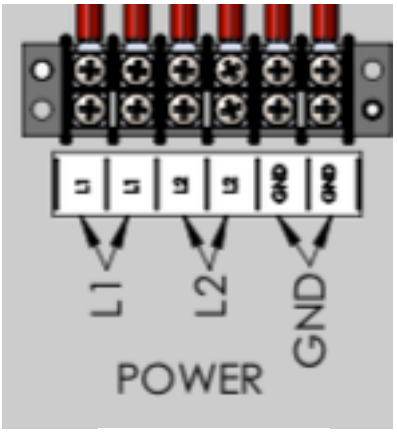
Orange wire and blue wire are the brake wires. Doesn't matter which terminal.

Black - UT1
White - VT2
RED. - WT3
GREEN - Ground



Step 2: Power Wires

L1- Hot wire
L2- Neutral wire
GND - Ground wire

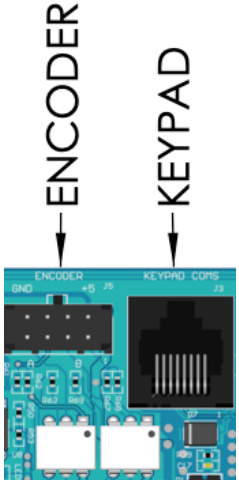


Step 3: Encoder Wires

The encoder wire is an 8 terminal wire that screws onto the side of the motor unit and plugs into the board at the encoder slot. These only go in one way.

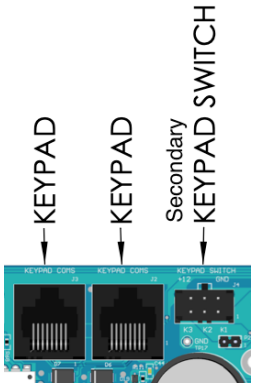
DO NOT FORCE THEM IN.
DO NOT CUT THESE AND SHORTEN THEM OR LENGTHEN THE ENCODER WIRES.

DO <u>NOT</u> route the encoder wires with or next to the motor power wire this will allow the encoder to lose counts . SEE Illustration.



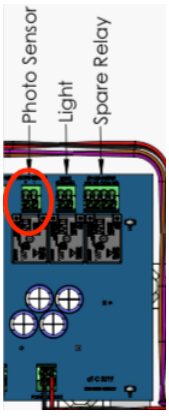
Step 4: Touch screen wires

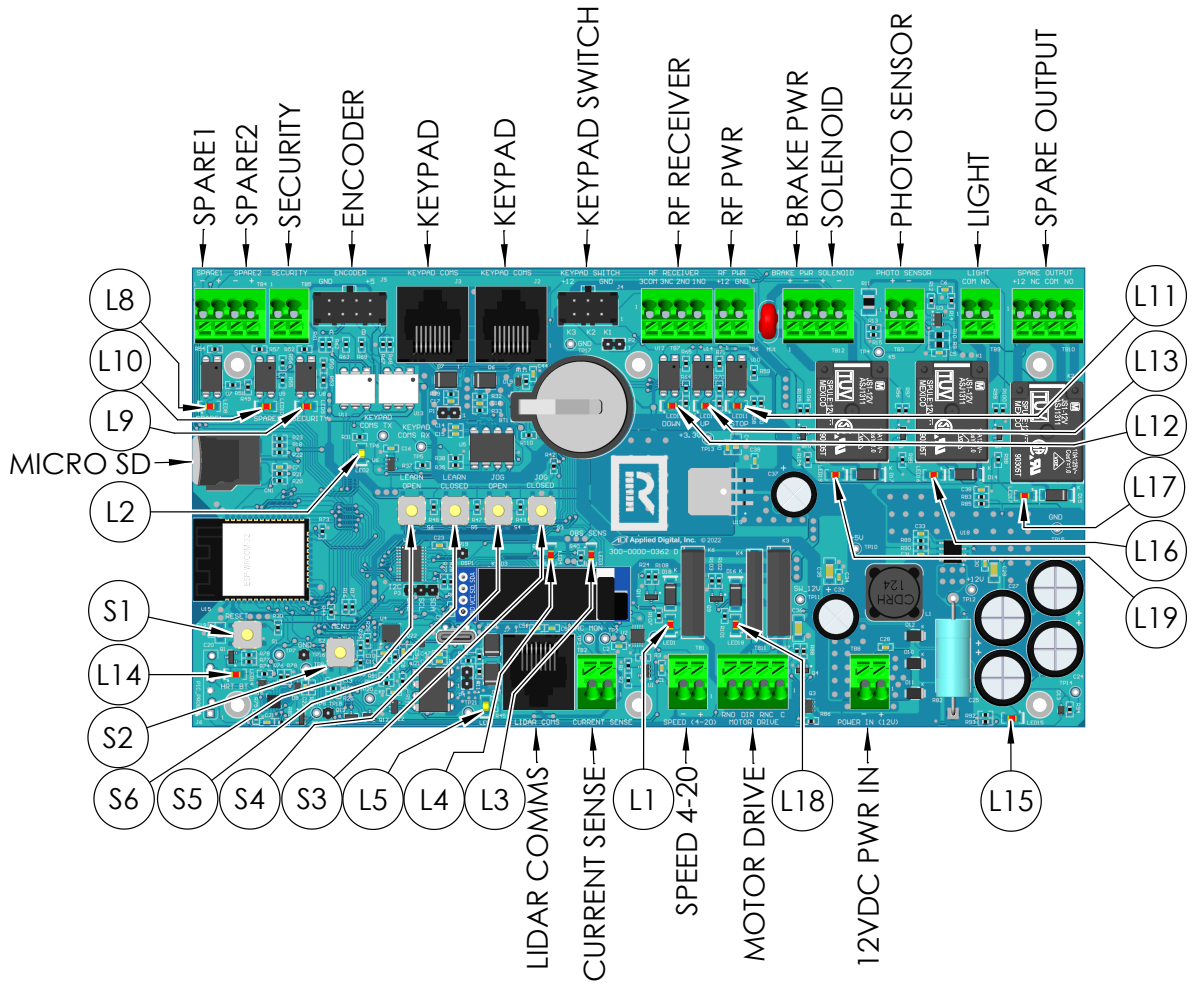
There is a premed harness in the hardware box.
These have Ends and they only go together one way.
DO NOT FORCE THEM.
The Touch screen or control station must be hooked up for the door to work!



Step 5: Photo eye wires

There are photo eyes provided with all doors.
Photo eyes must be installed to let the door close.
Make the wire match from side to side and terminate them into the slot marked PHOTO EYES.
<u>PHOTO EYE ARE REQUIRED!</u>





LEDS	
L1	DOOR OPEN
L2	COMMS
L3	OBSTN SENSE
L4	NOT USED
L5	LIDAR COMMS
L6	N/A
L7	N/A
L8	SPARE 1 INPUT
L9	SECURITY INPUT
L10	SPARE 2 INPUT
L11	KPAD/RF STOP
L12	KPAD/RF DOWN
L13	KPAD/RF UP
L14	HEAT BEAT
L15	POWER
L16	LIGHT RELAY
L17	SPARE RELAY
L18	DOOR CLOSE

SWITCHES	
S1	RESET
S2	MENU
S3	JOG CLOSED
S4	JOG OPEN
S5	LEARN CLOSED
S6	LEARN OPEN

DATE	REV.	DESCRIPTION	ECO #	ENG.	APPROVED
00/00/22	A	ORIGINAL RELEASE	1001xxx	BH	
00/00/22	B	2nd RELEASE	1001xxx	BH	
00/00/22	C	3rd RELEASE	1001xxx	BH	
00/00/22	D	4th RELEASE	1001xxx	BH	

ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	QTY REQD

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS DECIMALS ANGLES
+ .XX+ .XX + 1
.XXX+.XXX

MATERIAL --

FINISH --

DO NOT SCALE DRAWING

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE

APPROVALS	DATE
DRAWN BH	01/09/23
CHECKED	
RESP ENG	
MFG ENG	
QUAL ENG	

Applied Digital, Inc.

REDD G2 DOOR CONTROLLER

SIZE A | DWG. NO. 19xx | REV. A

SCALE | CAD FILE: | SHEET 1 OF 1

Start Up Process:

Setup: **ALWAYS LEARN THE OPEN POSITION BEFORE THE CLOSE POSITION**

Before Starting the programing Please find the 1/2x 1 lcd screen on the Board on the door. You will also need the touch screen to program the door.

1. Find the positive open position

Using the jog button. Move the door to the fully open position. Hit the learn open button. Use the jog closed button to move the door closed about a foot. Look at the lcd screen and the ENC count should never have a negative symbol in front of the number. If this number is negative. Change parameter number 42 to a one if zero. If 42 is a 1 change it back to 0. Then proceed on to relearn the open limit. It it already is positive continue on to step 2.

2. Learn Open Position

Use the Jog Keys to move the door to the Open Position
Press the Open learn key, the Display will show LEARN OPEN. The encoder count will be set to 0.

3. Learn Closed Position

Use the Jog Keys to move the door to the Closed Position

4.Press the Learn Closed key.

The display will show LEARN CLOSED and the current stop count.
The following parameters will be saved:

48 Max Current Stop set to Stop count - 500
35 Ramp Start Count set to 80% of stop count
36 Door Adjust Count set Max Current Stop count

The maximum end count will be set to the current encoder count plus the value in the Encoder Overshoot parameter(37)

5.Auto calibrate.

Move the door to the closed position
Set Current Calibration Enabled parameter (45) to 1.
Using the keypad, Open the door.
After door stops in the open position, Close the door)

When the door stops in the close position, the following parameters will be written:

Current Trip Open set to maximum opening current plus the value in the Current Calibration Offset parameter

Current Trip Close set to maximum closing current plus the value in the Current Calibration Offset parameter

Current Calibration Enable parameter will be set to 0

6. Switch Functions

Jog Open — While the key is pressed door will move toward the open position

Jog Closed / Enter — While the key is pressed door will move toward the closed position.
In Menu mode this key is used to accept the function on the display.

Learn Open — Sets the encoder count to 0.

Learn Closed — Sets the door stop count to the current encoder count.
Shows current door state and current encoder count and door stop count.

Menu — When in menu mode, this key will cycle through menu options

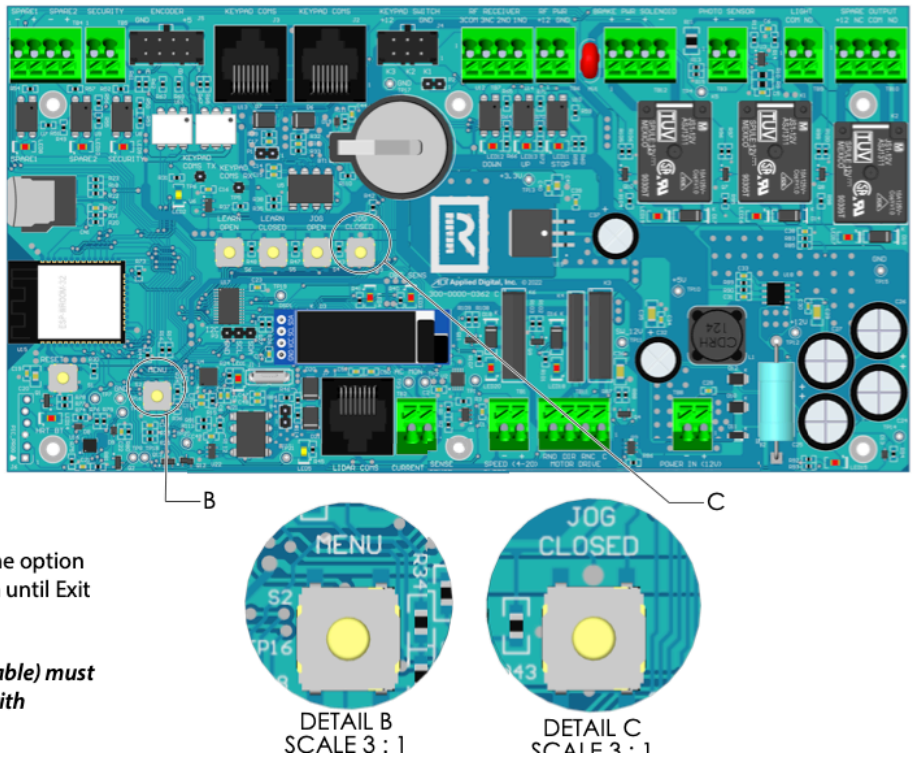
Reset —. Press and hold System Reset

Redd G2 Menu:

To enter menu mode press and hold the MENU button. The display will show "Boot Btn:0", the number will count up. Continue to hold until "Parms Restore" shows on display then release button.

The menu has 4 options.
Parms Restore – Set all parameters to factory defaults
FW Update – Update the firmware from a file on the SD card
OTA Update* – Update the firmware over the WiFi link.
Exit – Leave menu mode.
To cycle between option press and release the MENU button.
When the desired menu option is displayed, press the JOG CLOSED button to execution the option
To leave menu mode, press the MENU button until Exit shows, the press the JOG Closed button

To use the OTA option Parameter 9 (WiFi enable) must be set to 1 and a WiFi router or access point with the Renlita credentials must be available.



Troubleshooting

Motor going closed when you jog open:

Power down the unit. Switch the UT1 and VT2 wires. This will flip the direction of rotation inside the motor.

Door not operating properly:

Type 255 into perimeter #1. This will restore factory defaults. Start over at step 1 of the Startup procedure.

Door not closing all the way:

Relearn the open and closed and with the door still closed Change parameter #36 to match the door close count number on the SD screen. (You get the SD by Entering 1 into parameter #65.)

Controller relay clicking inside:

Enter You will then see in the bottom of the touch screen the **REASON FOR STOP**. See the Stop codes below!

RESTORING THE DEFAULTS TO THE UNIT:

This can be accomplished by inputing 1 in the **#65** parameter on the Touch Screen. This will require you to start back at **STEP 1.** OBSTRUCTION SENSING SET TO HIGH/LOW:

Parameters **#49** = open sensitivity and **# 50**= closed sensitivity can be manually adjusted. This can be adjusted by raising the number for either one to a higher number. The higher the number the less sensitive the door will be!

You **MUST VERIFY** the force need to reverse /stop the door. These are defaulted to 500. If the door doesn't make a full operation these two could be too low. These can go up to 1000.

NOTE: DO NOT LEAVE THEM THERE. YOU MUST ADJUST THESE DOWN TO WITHIN A REASONABLE FORCE TO MAKE THE DOOR REVERSE/ STOP.

Also Note: That is you change the speed of the motor, it will change the force required to open and close the door. You will have to adjust 49/50 for the speed change!

Motor going closed when you jog open:

Power down the unit. Switch the UT1 and VT2 wires. This will flip the direction of rotation inside the motor.

Door not operating properly:

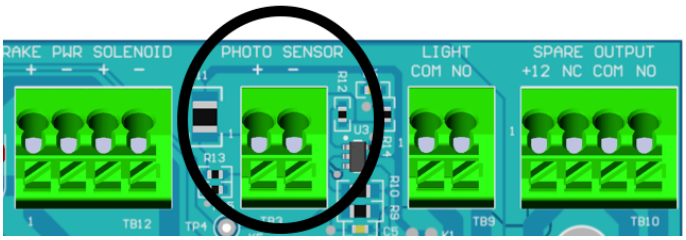
Type 255 into perimeter #1. This will restore factory defaults. Start over at step 1 of the Startup procedure.

Door not closing all the way:

Relearn the open and closed and with the door still closed Change parameter #36 to match the door close count number on the SD screen. (You get the SD by Entering 1 into parameter #65.)

Photo Eye wiring

Connections are 2 wires



Exterior Photo eye Option

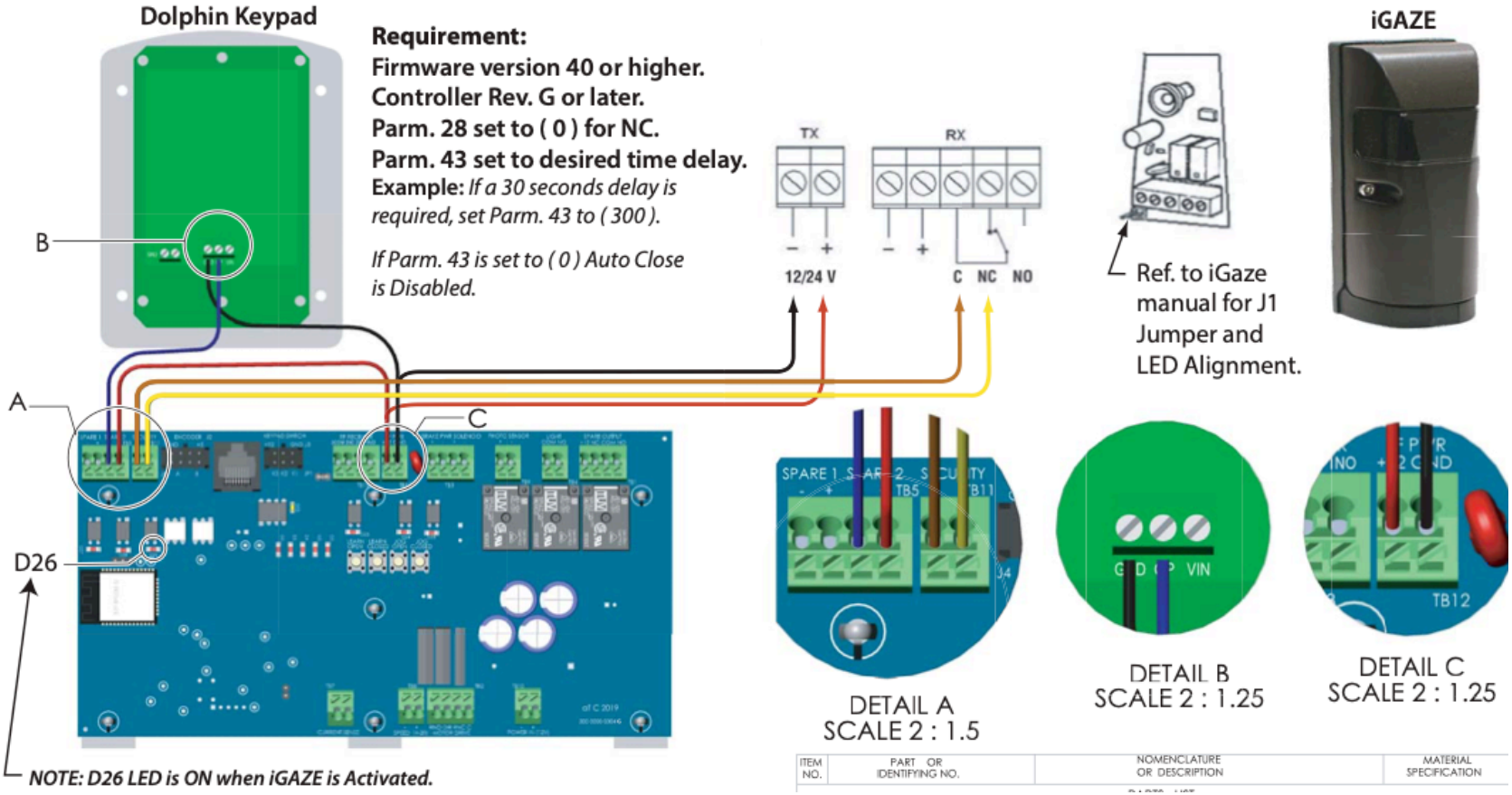
Auto Close Operation;

1. When the Dolphin Keypad is activated the door will open and a timer will begin.
   A. When the timer expires and the iGAZE ***IS NOT*** activated the door will close .
   OR
   B. When the timer expires and the iGAZE ***IS*** activated the timer will reset and door will not close .

Dolphin Keypad

Requirement:
Firmware version 40 or higher.
Controller Rev. G or later.
Parm. 28 set to (0) for NC.
Parm. 43 set to desired time delay.
Example: *If a 30 seconds delay is required, set Parm. 43 to (300).*

If Parm. 43 is set to (0) Auto Close is Disabled.



iGAZE

Ref. to iGaze manual for J1 Jumper and LED Alignment.

DETAIL A
SCALE 2 : 1.5

DETAIL B
SCALE 2 : 1.25

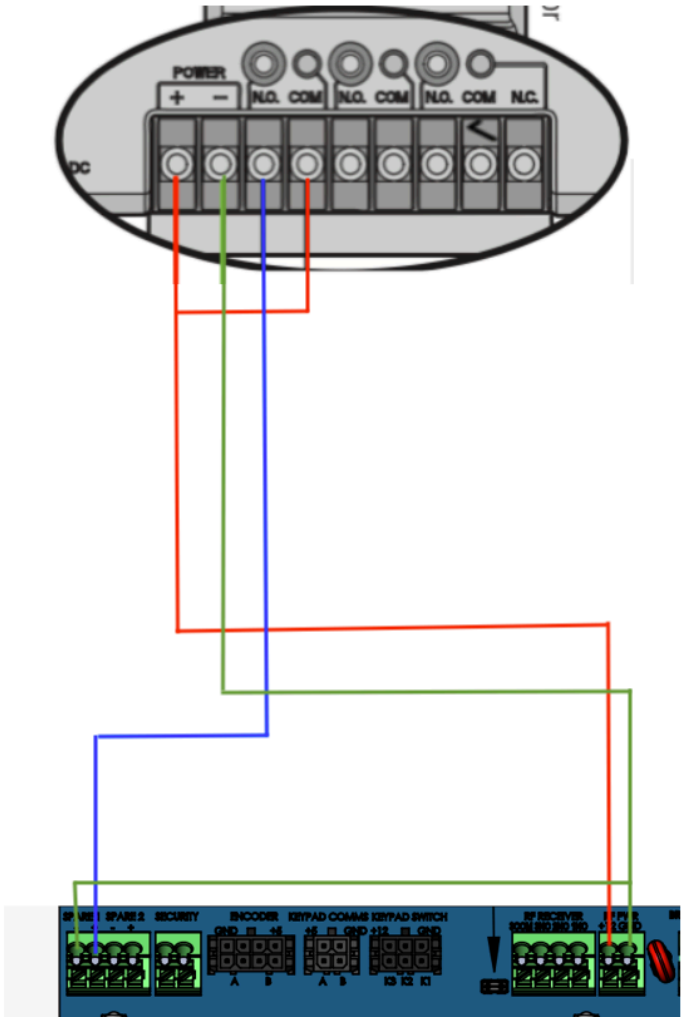
DETAIL C
SCALE 2 : 1.25

NOTE: D26 LED is ON when iGAZE is Activated.

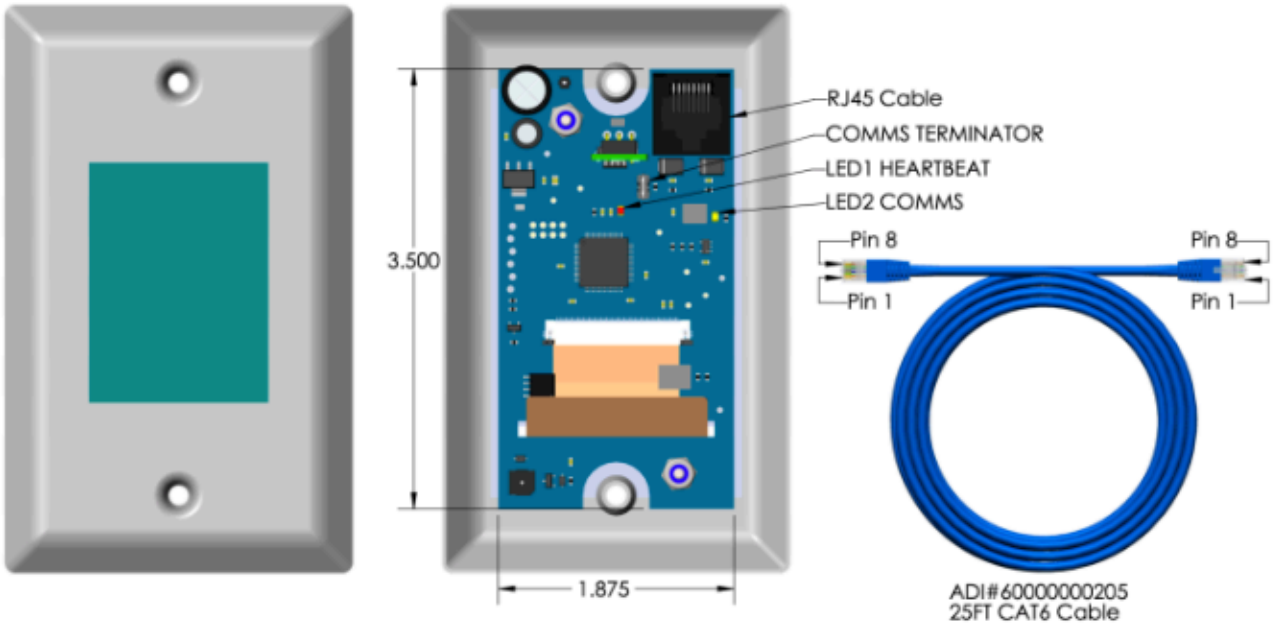
ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION

850 Wiring Schematic to a Redd Controller

The 850 Must be wiring exactly like this photo.



CAT6 INSTALLATION MANUAL



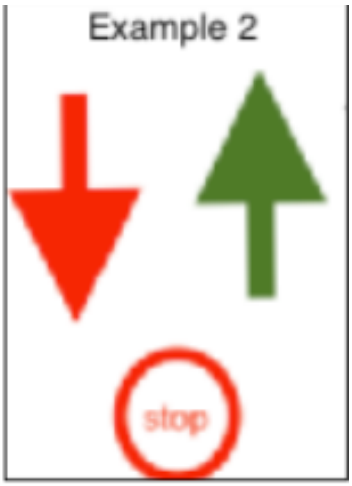
Single gang utility handy box with six1/2- inch knockouts, Thomas & Betts 104-W-1/2 Pre-Galvanized steel single gang utility handy box.

4 inch x 2-1/8 inch x 2-1/8 inch.

Must Have Square Corners

. Once theTouch Screen is wired in Plug in the controller. This will power up the touch screen and will bring up the Idle Screen, This Idle Screen is the Renlita logo. See below.

If You touch the screen and it brings up a keypad like the example above labeled example 1 above. You Must enter 2430 as the code. This should then allow the screen to go to example 2 above.

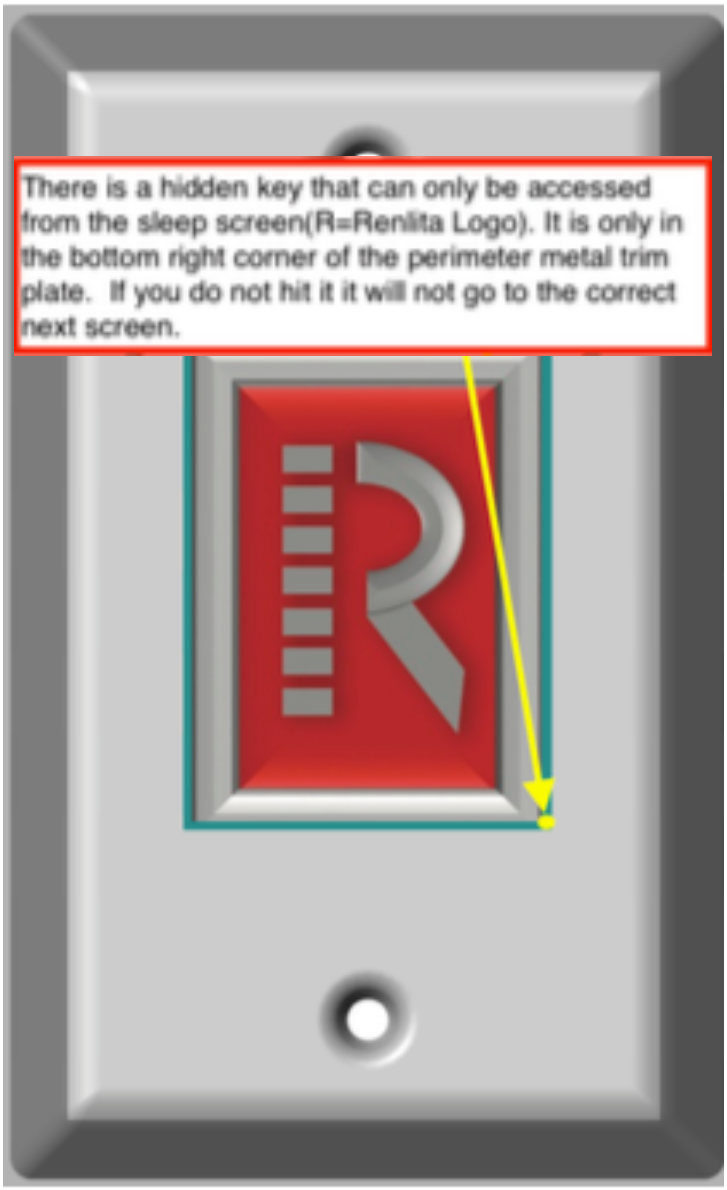


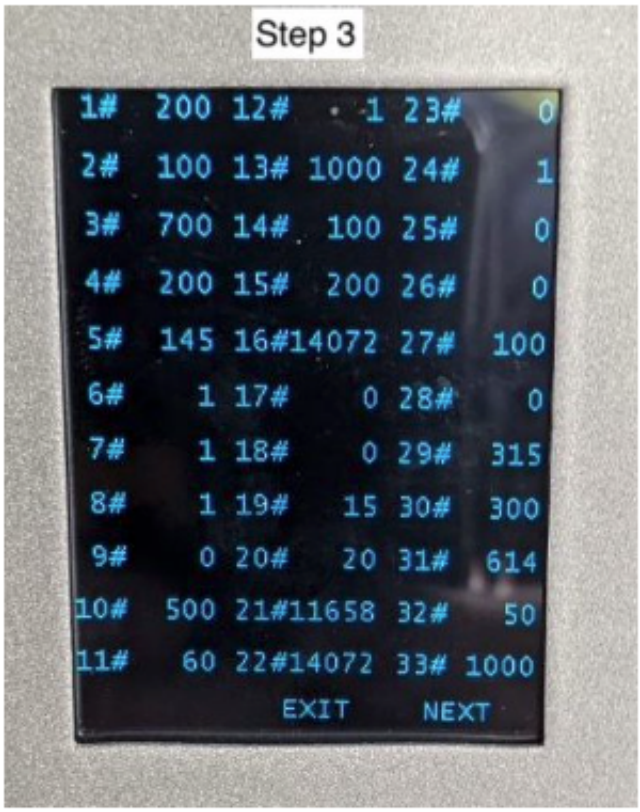
Changing parameters from the touch screen

The limits can not be learned from the touch screen. The limits must be learned from the controller. You can get status read outs from the touch screen and change parameters without a phone hooked to the wifi of the controller.

1. First the touch screen should have the Renlita R logo on the screen like the photo to the right.

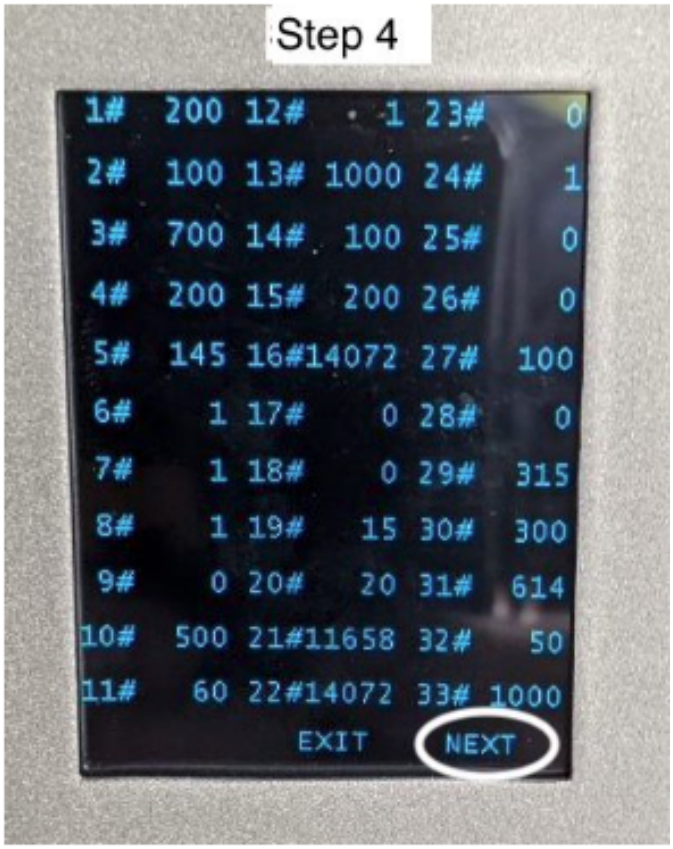
2. With the Touch screen showing the R logo. This is the only screen this will work on. In the Right hand bottom most corner of the metal frame there is a very small hidden button. You will have to have a paper clip or a small pen to touch. Once you have successfully touched the button the screen will change.





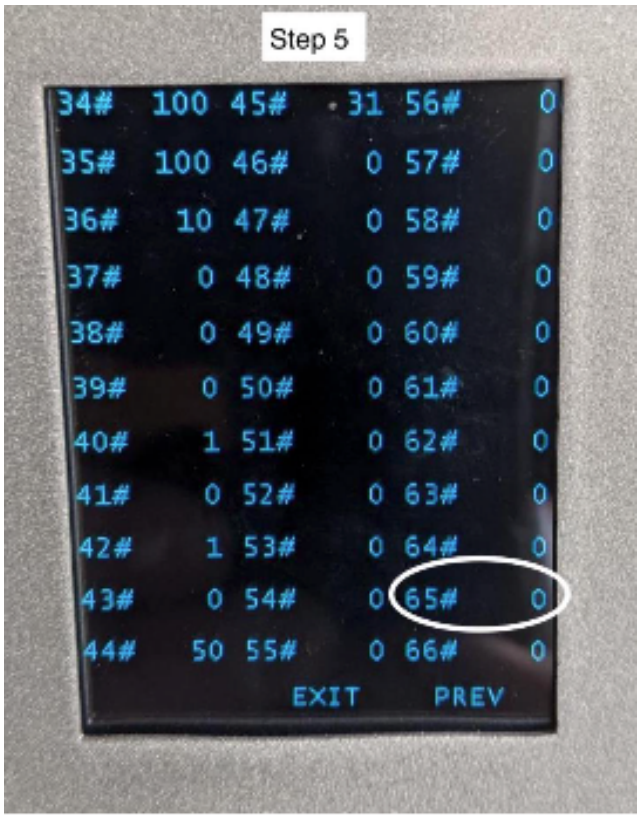
3.The Screen that will show up once the button has been touch is the one to the left labeled step 3. If you do not get this screen let the touch screen return to the R screen. Or unplug it and plug it back in.

4. Down at the bottom right of the screen is the word NEXT. Push it lightly and release.



5. System data information is retrieved by gentle taping on number #65 See example

on the right.



7. Using the back arrow delete the current data in the box. Type in the new setting you are wanting (example 100)

then click enter.

8. The Screen will show the following information (see photo to the right). This data will let you fully complete the programing and set up of the REDD motor with out a phone connected to the controller.

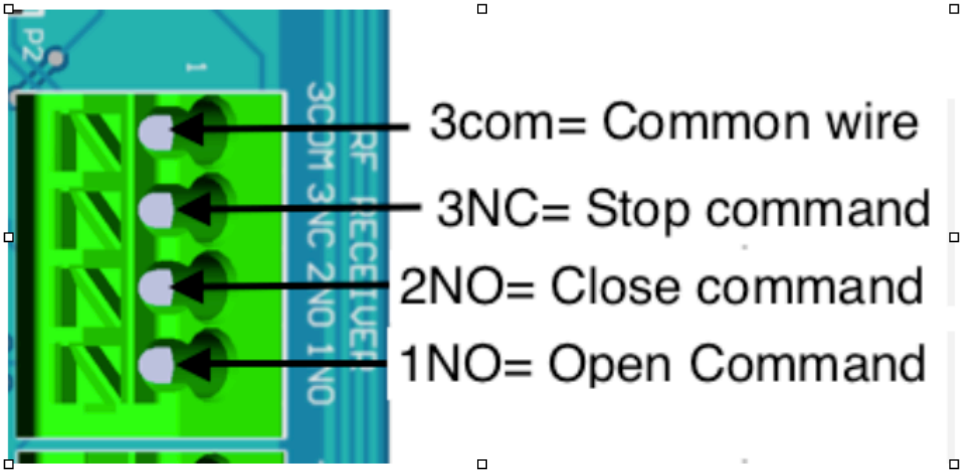
9. Take Pictures of the complete parameter list before you start changing any. This will ensure that if something get changed by mistake you can just change it back. Below is a complete list of all the parameters with descriptions. To restore Factory default parameters tap on parameter #1 and write 255 click enter.

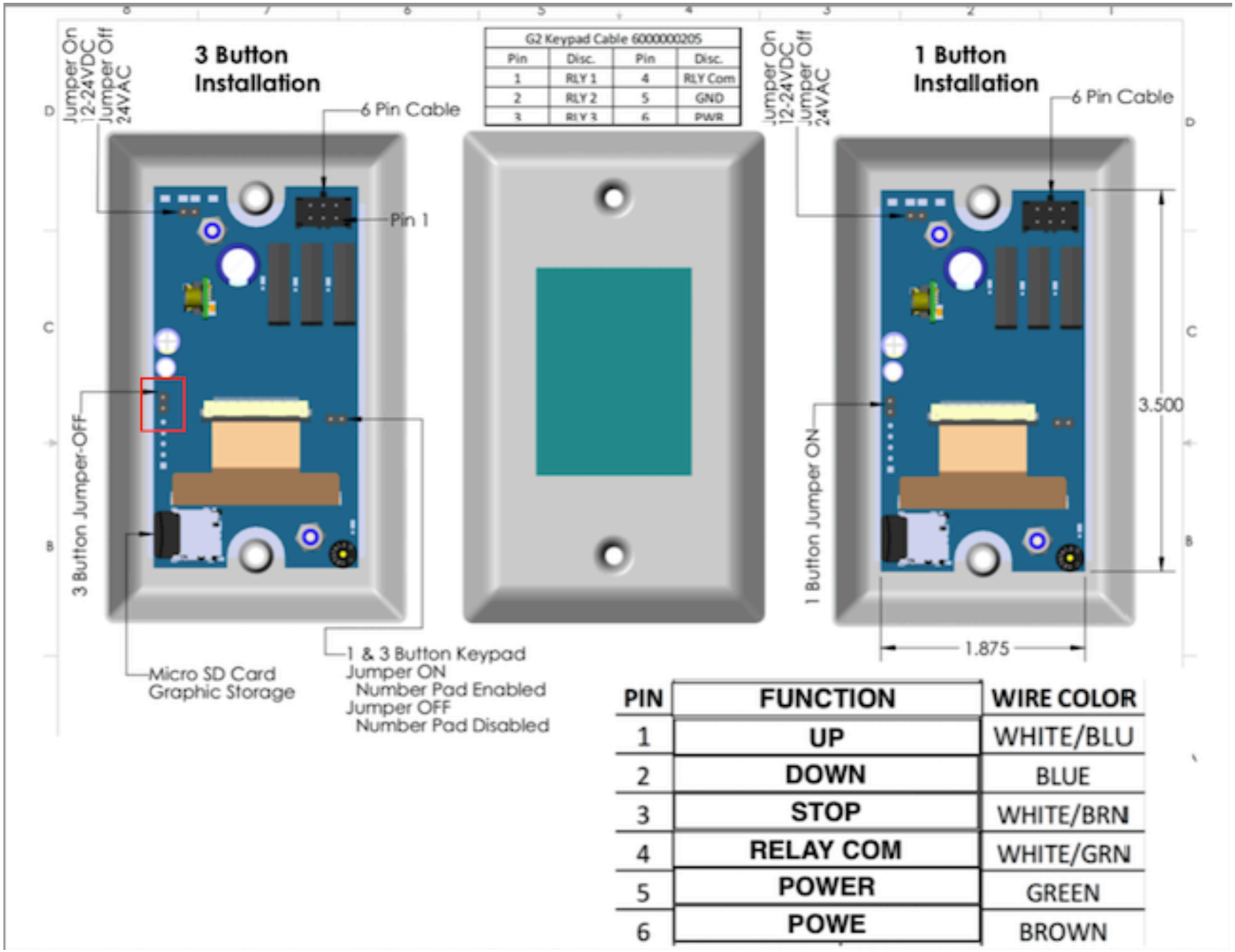
REDD G2 Home Automation Wiring Diagram

These are dry contact relays inputs. You will need 4 wires for a control station that has a stop feature.
Without a stop feature you will need 3 wires.

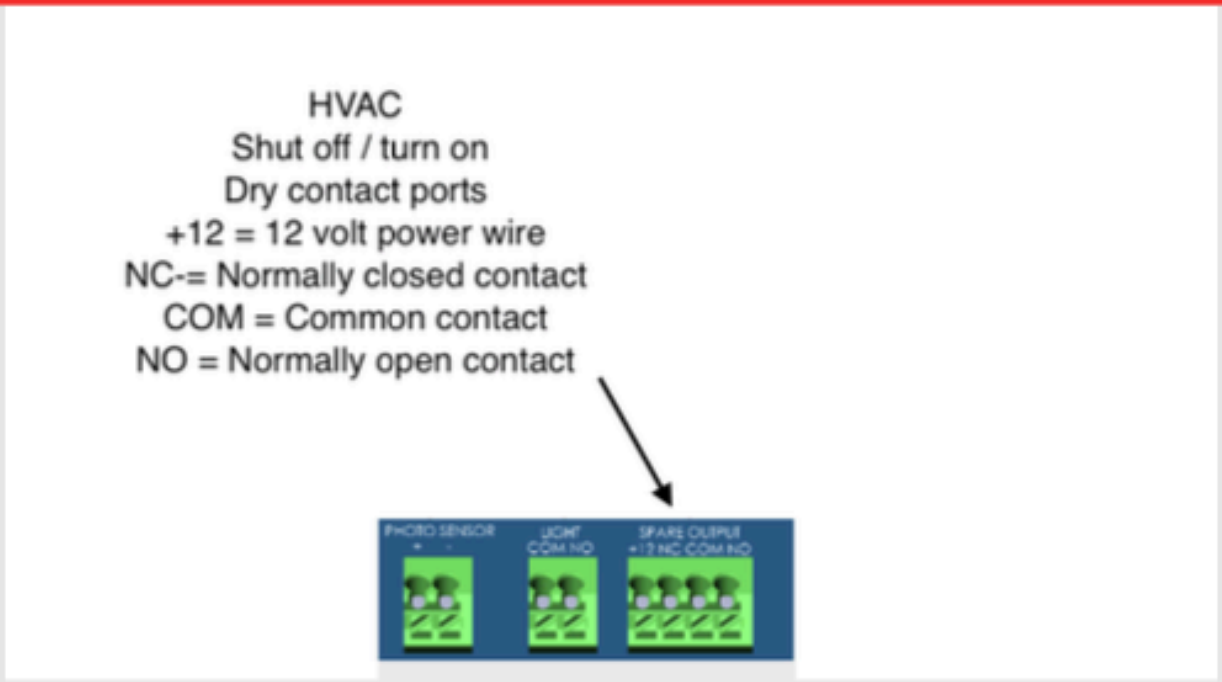
The terminal connection is in the top center of the board and is labeled RF Receiver.

These connections are labeled on the board above the connector.




3 Button Installation
Jumper On 12-24VDC
Jumper Off 24VAC
6 Pin Cable
Pin 1
3 Button Jumper-OFF
Micro SD Card Graphic Storage
1 & 3 Button Keypad Jumper ON Number Pad Enabled Jumper OFF Number Pad Disabled
G2 Keypad Cable 6000000205
Pin | Disc. | Pin | Disc.
1 | RLY 1 | 4 | RLY Com
2 | RLY 2 | 5 | GND
3 | RLY 3 | 6 | PWR
1 Button Installation
Jumper On 12-24VDC
Jumper Off 24VAC
6 Pin Cable
1 Button Jumper ON
3.500
1.875
PIN | FUNCTION | WIRE COLOR
1 | UP | WHITE/BLU
2 | DOWN | BLUE
3 | STOP | WHITE/BRN
4 | RELAY COM | WHITE/GRN
5 | POWER | GREEN
6 | POWE | BROWN

HVAC
HOOKUPS TO A REDD



Following the touchscreen manual

Click on #55 and change to appropriate setting below.

Below are the dictations of what you are needing for your system:

0, no relay operation
1, relay energized if door fully closed
2, relay energized if door fully open
3, relay energized if door fully open or fully closed
4, relay energized if door not fully closed
8, relay energized if door not fully open

Second Touch screen options

Renlita Touch Screen

When The keypad Enabled Jumper is installed and the system in idle(main logo screen)
Pressing anywhere on the screen will bring up a 10 key pad for entering a security code.

When the security code has been entered, then press the Enter key. If the cod is correct the door control screen will show. If the code is incorrect. The unit will beep and the code may be entered again.
If the keypad is showing and the key is not pressed for 20 seconds, the system will revert back to the idle screen
The default code is the last 4 digits of the serial number on the white tag on the back of the touch screen.
Whenever the default factory code is entered, the user will be asked if they would like to set a new passcode. This will always be the case.

Pressing NO will proceed to the door operations screen.

Pressing YES will show the 10 key pad. The user will then enter a new code of 4 digits, press enter, Then a confirmation screen will ask you to accept or cancel.

ACCEPT will save the new passcode

CANCEL will proceed to the operations screen

NOTE: The user code CAN NOT have all 0000. Any leading zeros will be ignored.

A-750 or s-3k Set up for a Redd motor

See Below a typical setup for a A-750 door settings in the Parameter list in the touchscreen for the Redd motor.

1. Run speed and min speed must remain at least 100 points apart all ways.

2. Turn Jog speed # 73 down to 125 to allow door to run at lower speed while jogging.

3. Change the time outs on the door. These are #40, #43, #5 to match the drawings.

ANYTIME YOU CHANGE THESE TIMEOUTS YOU MUST RELEARN THE DOOR LIMITS

4. Change the ramp steps- #34 to 60 this will slow make the increase in speeds much smaller to slow the doors breaking point down.
   You can go up to 100 on these steps. But only Increase this in 20 point increments at a time and test the door operation.

5. If Needed you can Move your ramp start count around. #35. By Moving this number 2000 less than what it is you are slowing the door down by extending to ramping out.

    1. By moving this 1000 more you are making the door reach full speed faster.

6. Change max run current closed #48 To match #36 this will stop some error from occurring on obstructions.

Parameter	Default	Min	Max	Name	Description
1	1	1	250	Adnet Address (40)	Adnet Address
2*	0	0	1	Single Button(17)	Enable single button keypad operation
3	0	0	10000	Bug Screen Button Time (46)	Seconds/10 for bug screen relay to be engaged. Set to 0 to disable bug screen/
4	100	0	65535	Obstruction Sensor Timeout (14)	Obstruction sensor timeout (mS), if 0 sensor disabled
5	1000	100	65535	Door Timeout (33)	Maximum time allow for door travel. 100 mS resolution
6					
7					
8	0	0	10000	Security Code (41)	Security Code set to 0 to disable
9	1	0	1	Wifi Enable (38)	Enable WiFi function
10	614	0	1023	Power Down Voltage (31)	ADC reading for power down status save
11				Cycle Count	Cycle Count
12	0	0	10000	Auto Script (42)	Set to 0 for run auto script at startup
13					
14	0	0	10000	Firmware Version(45)	Current Firmware Version. Cannot be changed
15-22					
23	800	600	10000	Wifi Checkin Time	Seconds * 10 for Wifi Checkin, when Wifi is enabled
24	0	0	1	Interlock Enable (25)	Interlock Enable - Interlock must be closed to move door. Interlock is from 3NC to ground with JP1 installed
25	0	0	2	Expander Count (47)	Adicon I/O Expander count
28	0	0	1	Security Input Type	0 - n/c 1 - n/o
29	0	0	10	Obstruction Retries (26)	Obstruction retry count. Number of attempts at closing the door after an obstruction error
30				Virtual Parm Address	
31				Virtual Parm Number	
32				Virtual Parm Data	
33	0	0	20000	Cycle Time (9)	Time delay in seconds * 10 to start the door in opposite direction for cycle tests. Set o 0 to disable
34	60	20	100	Ramp Steps (20)	Ramping steps
35*	0	100000	65535	Ramp Start Count (21)	Ramp Start Count. Encoder count to begin ramping function when door is closing.
36	100000	10	100000	Door Adjust Count (22)	Door Adjust Count. Encoder count to begin testing for when door stops moving when closed. Set to stop count.
37	0	0	500	Encoder Overshoot (23)	Number of encoder counts to go past stop point when using auto calibrate
38	1	0	1	Auto Calibration Disable (24)	Disable Auto Calibration 1 – Disable encoder stop count reload
39					
40	500	100	1000	Encoder Timeout (10)	Encoder Timeout . Determines when encoder has stopped. 1ms resolution.
41	60	10	512	Encoder Resolution (11)	Encoder slots. Number of slits in 1 revolution of the encoder
42*	0	0	1	Encoder Direction (12)	Encoder direction. Used to reverse Encoder count
43	2000	50	65535	Max Encoder Interval (13)	Encoder Max Interval. Maximum interval between encoder ticks to determine door is closed. 21.3uS resolution
44	100	0	100	Over Travel Offset (27)	Encoder overshoot for fail safe shutdown test
45	0	0	1	Current Cal Enable (18)	Enable current min max auto calibration
46	15	0	1023	Current Cal Offset (19)	Current Cal Offset. Value added to current reading for auto calibration settings

47	200	0	65535	Max Current Start (15)	Max current Start count. Encoder count to begin monitor max cycle current
48	0	0	65535	Max Current Stop (16)	Max current Stop count. Encoder count to stop monitoring max cycle current
49*	500	0	1023	Current Trip Open (29)	Current Trip Open. Over current error during opening
50*	500	0	1023	Current Trip Close (30)	Current Trip Close Over current error during closing
51	100	50	65535	Current Sense Lockout (34)	Current Sense Lockout.Time delay after starting motor to enable over current sense. 10MS resolution
52	50	0	10000	Brake Solenoid Delay (32)	Delay before starting motor after brake solenoid is engaged, and delay after stopping motor before disengaging brake solenoid. 10 mS resolution
53	100	0	10000	Door Reverse Delay (35)	Time delay before reversing motor direction after an error. 10MS resolution
54	10	0	1000	Lamp Time	Time(minutes) for lamp to stay on after door move
55	0	0	8	HVAC Relay Control (37)	0 – Off 1 – Door Fully Closed 2 – Door Fully Open 3 – Door Fully closed or Fully open 4 – Door Not Fully Closed 8 – Door Not Fully Open 5,6,7 – Undefined Setting this parameter to non-zero will clear P_AUTO_CLOSE
56	0	0	1	Fire Door Enable (39)	Spare In 1 – when active will close door and lockout keypads
57	0	0	65535	Enable Auto Close (43)	Seconds * 10 delay before Auto close door. This delay begins when door starts to open using Spare Input 2. Set to 0 to disable. Setting this parameter to non-zero will clear HVAC Relay Control parameter
58	50	50	10000	Auto Close Warning Time (44)	Seconds * 10 spare relay will activate when door begins to close in Auto close mode
59					

Parameter	Default	Min	Max	Name	Description
60	1	0	1	Motor Run Polarity (6)	Sets relay state for motor controller start or FWD input
61	1	0	1	Motor Direction Polarity (7)	Sets relay state for motor controller direction or REV input
62	1	0	1	Motor Run Type (8)	0 – RUN/STOP, DIR 1 – FWD, REV
63	20	0	10000	Encoder Delay	Seconds * 10 after door begins to wait before checking encoder timeout
64	2002	3	9000000	Serial Number	
65	0	0	1	Show current status (65)	Write any data to show current status on display. Equivalent of SD command
66	0	0	1	Toggle Display End of run data(66)	Write 1 to enable showing End of Run Data on display. 0 to turn off. This parameter is not saved to memory.
70*	200	0	1023	Run Speed (1)	Motor Run Speed
71*	100	0	1023	Min Speed (2)	Motor Minimum Speed
72	700	0	1023	Max Speed (3)	Motor Maximum Speed
73	200	0	1023	Jog Speed (4)	Motor Jog Speed
74	0	0	1023	Off Speed (5)	Motor off speed

To restore factory parms, write a 255 to parameter 1
To start a firmware update over wireless write 253 to parameter 1

Stop Codes		
Number	**Type**	**Description**
0x01	Encoder EOT Stop Ticks	Time between encoder ticks was longer that P43. This means the door has stopped moving before reaching the closed count
0x02	Encoder Count	Door reached end count. Controlled by encoder open an
0x04	Encoder Timeout	Time expired with an encoder tick . Controlled by P40. C
0x08	Over Current	Max current parm (P49,P50) exceeded during run
0x10	Tmeout	Door did not reach endpoint in alloted time.P5
0x20	Keypad	Door stopped because of keypress or external switch
0x40	Bad State	Invalid state in motor task
0x80	Over Travel	Current encoder count is outside of the endpoints by val

Conversion Chart for the G2Parameter list to the OLD G1 Parameter list

Parameter Cross Reference Orignal REDD controller to REDDG2								
Parm	Name	REDD G2	Parm	Name	REDDG 2	Parm	Name	REDDG 2
1	P_SPEED_RUN	70	21	P_RAMP_START_COUNT	35	41	P_SECURITY_CODE	8
2	P_SPEED_MIN	71	22	P_DOOR_CLOSED_START	36	42	P_AUTO_SCRIPT_SETUP	12
3	P_SPEED_MAX	72	23	P_ENCODER_OVERSHOOT	37	43	P_AUTO_CLOSE	57
4	P_SPEED_JOG	73	24	P_DISABLE_AUTOCAL	38	44	P_AC_WARNING_TIME	58
5	P_SPEED_OFF	74	25	P_ENABLE_INTERLOCK	24	45	P_FIRMWARE_VERSION	14
6	P_START_POL	60	26	P_OBSTRUCTION_RETRY	29	46	P_BUG_SCREEN_BTN_TIME	3
7	P_DIR_POL	61	27	P_OVER_TRAVEL_OFFSET	44	47	P_EXPANDER_COUNT	25
8	P_CONTROL_TYPE	62	28	P_SECURITY_IN_TYPE		65	Show current Status	65
9	P_CYCLE_TIME	33	29	P_CURRENT_TRIP_OPEN	49	66	Show end of run	66
10	P_ENCODER_TIMEOUT	40	30	P_CURRENT_TRIP_CLOSE	50			
11	P_ENCCODER_RESOLUTION	41	31	P_VOLTAGE_TRIP	10			
12	P_ENCODER_DIR	42	32	P_BRAKE_SOL_DELAY	52			
13	P_ENCODER_MAX_INTERVAL	43	33	P_DOOR_TIMEOUT	5			
14	P_OBS_TIMEOUT	4	34	P_CURRENT_SENSE_LOCKOUT	51			
15	P_MAX_RUN_CURRENT_START	47	35	P_REVERSE_DELAY	53			
16	P_MAX_RUN_CURRENT_END	48	36	P_LAMP_TIME	54			
17	P_SINGLE_BUTTON_KPD	2	37	P_HVAC_RELAY_CONTROL	55			
18	P_CURRENT_CAL_ENABLE	45	38	P_WIFI_ENABLE	9			
19	P_CURRENT_CAL_OFFSET	46	39	P_FIRE_DOOR	56			
20	P_RAMP_STEPS	34	40	P_ADDR	1			