

PS1 Parking Slider Controller Outline

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1. Introduction

This document is intended to further detail the standard parking slider controller equipment described in the contractual agreement. It will cover functionality and provide step-by-step standard operating procedure.

a. Content of Carousel USA Agreement

CUSA PS1 Controls, with one (1) remote transmitter.

b. Comp	onents	
Enclosure:	JB121206HC	Rittal H12" x W12"x D6" Steel Enclosure
VFD:	22F-A8P0N103	Allen-Bradley PowerFlex 4M 120V 1 HP
Circuit Breaker:	L9-10/2/D	Sprecher+ Schuh 2-Pole Circuit Breaker, 10A
Wi-Fi Switch:	4CHPRO	SONOFF 4ch R3 Wi-Fi Smart Switch
Operators:	800FD-SB32X20 LB1P-1TO4G LB1P-1TO4R	Allen-Bradley 3-Pos. Spring-Return Selector Switch IDEC Green LED Indicator IDEC Red LED Indicator
Sensors:	PNT-CP-4A (Qty. 2)	AD Inductive Proximity Sensor, PNP, NC

2. Control Panel

a. Enclosure Specifications

- Wall mounting hole dimensions H10.24" x W10.24" x Ø0.34"
- Carbon steel housing and door, RAL 7035 light gray, dip-coat primed, powder-coated
- One-piece welded cold-rolled steel body
- Left-hand hinged door
- Single quarter-turn latch with screwdriver insert
- Foamed-in-place gasket
- 4 wall mounting holes
- UL Type 1 (other ratings available on request)
- Recommended enclosure location: within 15ft of motor.

b. Connections

- Incoming Power (9ft cable; Included)
 - Voltage: 120V/1Φ/60Hz
 - Required Amperage: 10A
- Cable to motor (17ft cable; Included)
 - o Motor Horsepower: 0.5 HP, 230VAC, 1.9A, 3Φ, 60Hz
 - O Sensors: 24VDC, 200mA, 4C



c. Features and Functions

The following operators will be available on the front of the control panel:

- Jog Left/Right Spring-return Selector Switch
 Jogs slider left or right. Slider will stop when the switch is released.
- **POWER** *Indicator Light, Green* Illuminates when control panel is powered.
- **FAULT** *Indicator Light, Red* Illuminates when there is a fault in the system.
 - <image><image>

d. Front Panel Layout

e. Electrical Schematic See Attachment.

f. Enclosure Drawing

See Attachment.

3. Remote Controller (Transmitter)

a. Specifications

- Frequency: 433MHz
- Buttons: 4x1 step
- Weight: 1 oz
- Dimensions: 2.1" x 1.2"
- Batteries: 1 x 12V 27A



b. Features and Functions

The following functions will be available on the remote controller:

• **A** Momentary Push Button

Moves slider left. The slider will continue moving until it reaches the end of its travel or button A is pressed again to stop slider.

- B Momentary Push Button
 Moves slider right. The slider will continue moving until it reaches the end of its travel or button
 B is pressed again to stop slider.
 - c. Remote Controller Button Layout



4. Standard Operating Procedure

- 1. User will pull the vehicle onto the slider.
- 2. User will exit the vehicle and use the front panel Jog switch or the A/B buttons on the remote controller to move the slider in the desired direction.
- 3. Once the vehicle is in position, user will release the Jog switch, or press the A/B button again.

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Parking Slider Turntable Controller Troubleshooting Guide



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1. Introduction

This manual provides a step-by-step guide to troubleshooting simple issues related to the Carousel-USA Parking Slider Controller.

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2. Inspect Operational Area

Create a clear and free working area around the turntable, ensuring that there is no debris that could cause interference with the Slider while in motion and that no one would be endangered by sudden movement of the Slider at any time while troubleshooting.

3. Opening the Control Box

Using a large, flathead screwdriver, rotate the key-hole a quarter turn counter-clockwise to unlatch the door, and open the control box.



WARNING

OPENING THE CONTROL BOX EXPOSES LIVE WIRING. ANY WORK PERFORMED INSIDE THE CONTROL BOX IS DONE AT THE USER'S OWN RISK. TO PREVENT ELECTRICAL SHOCK USE CAUTION WHENEVER WORKING NEAR EXPOSED WIRING OR CONNECTIONS.

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4. Check Circuit Breaker

A. Reset Circuit Breaker

If the orange tabs on the circuit breaker have been flipped down, reset them by pushing them back up into the position displayed below. If they are forced down again, the fault condition is still present. Call Carousel-USA at (626)334-7190 and ask for electrical troubleshooting assistance.

5. Check for VFD Fault

A. Clear VFD Faults

On the VFD, if the LED light labeled "FAULT" is lit, press the VFD Fault Reset Button pictured below. If the fault is still present, check the table below to determine what is causing the fault, and next steps to take to correct the fault. If there is



Circuit Breaker

no fault present but the table is still not fully operational, skip to Section 9 Controls

Testing.



VFD Fault Reset Button



DISCLAIMER

Before performing any work involving removing wire from terminals, ensure that power is turned off and proper precautions are taken to avoid electrical shock. If ever unsure about how to proceed, please email Carousel-USA at support@carousel-usa.com and provide a brief description of the issue as well as pictures inside the control box or call Carousel-USA at (626)334-7190 and request electrical troubleshooting assistance for a live diagnostic.

6. VFD Faults Table

Displayed Fault Code	<u>Fault</u>	Description	<u>Next Steps</u>
F003	Power Loss	Excessive DC Bus voltage ripple	Check incoming line for phase loss or line imbalance
F004	Under Voltage	DC bus voltage fell below the minimum value	Check incoming line for low voltage or line power interruption. Fault will also appear briefly whenever the control box is powered down via circuit breaker or main disconnect switch
F005	Over Voltage	DC bus voltage exceeded maximum value	Check incoming line for high voltage or transient conditions
F006	Motor Stalled	Drive is unable to accelerate motor	Ensure that VFD parameter P109 is set to 3.0 (See VFD Parameters Section)

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F007	Motor Overload	Internal electronic overload trip	Ensure that VFD parameter P103 is set to 4.2 (See VFD Parameters Section)
F008	Heatsink Over Temperature	Heatsink Temperature exceeds a predefined value	Check for blocked or dirty heatsink fins or cooling fan on the VFD. If ambient temperature is below 40°C (104°F) VFD may need replacing
F012	Hardware Over Current	The drive output current has exceeded the hardware current limit	Ensure total load on turntable does not exceed rating for your model
F013	Ground Fault	A current path to earth ground has been detected at one or more of the drive output terminals	Check the motor and external wiring to the drive output terminals for a grounded condition
F038	Phase U to Ground		Check the wiring
F039	Phase V to Ground	A phase to ground fault has been	between the drive and the motor, check
F040	Phase W to Ground	detected between the drive and the motor in this phase	the motor for grounded phase, and replace drive if fault cannot be cleared
F041	Phase UV Short	Evenceive current bac	Check the motor and
F042	Phase UW Short	been detected	wiring for a shorted
F043	Phase VW Short	between these two output terminals	condition, and replace drive if fault cannot be cleared

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			IMPORTANT
F048	Parameters Defaulted	The drive was commanded to write factory default values to all parameters	**See VFD Parameters Section to set parameters before operating turntable. Failure to do so may result in damaged components**
F064	Drive Overload	Drive rating of 150% for 1 minute or 200% for 3 seconds has been exceeded	Ensure total load on turntable does not exceed rating for your model
F070	Power Unit	Failure has been detected in the drive power section	Cycle power and replace drive if fault cannot be cleared
F100	Parameter Checksum	The checksum read from the board does not match the checksum calculated	Set VFD parameter P112 to 1 (See VFD Parameters Section) to reset parameters to factory defaults **IMPORTANT** **See VFD Parameters Section to set parameters before operating turntable. Failure to do so may result in damaged components**



7. VFD Navigation

On power-up, the VFD display will show 0.0 Hz, indicating that the turntable is not moving. Hit enter, and the display will change to show one flashing letter and three solid numbers indicating that the up and down arrows will change the letter. Hitting enter will allow you to change the numbers rather than the letter, and hitting escape will bring you back to 0.0 Hz. Navigate to the parameter you need and hit enter again to view the value currently set to that parameter. This can be changed if needed by using the arrow keys and will be



saved once the escape button is pressed, however, you must only change these values if instructed to do so as it may cause damage to the turntable if changed incorrectly.

8. VFD Parameters

Stop ALL turntable movement before changing parameters

A. Factory Default Parameters

If you believe the issue is being caused by parameters in the VFD, begin by factory resetting the parameters. This can be done by setting the value of parameter PO41 to 1, however, keep in mind that the parameters listed in the next section will need to be set again to operate the turntable without possible damaging of components.

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B. Parameters Set by Carousel-USA

The following are parameters set by Carousel-USA, all others should be set at the factory default. Use these as a guide on which parameters need to be changed if the VFD gets set back to a factory default state (via parameter P041 or P112 being set to 1, or an F048 fault occuring):

P103 (Motor Overload Current): 2.8A

P104 (Minimum Frequency): 15.0 Hz

P106 (Start Source): 2

P109 (Acceleration Time): 4.0 seconds

P110 (Deceleration Time): 2.5 seconds

C. Diagnostic Parameters

The following parameters are used in troubleshooting to determine important control values and cannot be changed.

Parameter Number	Parameter Name	Description
d001	Output Frequency	Frequency present at VFD to motor terminals
d002	Commanded Frequency	Frequency the VFD is attempting to achieve
d003	Output Current	Current present at VFD to motor terminals
d004	Output Voltage	Voltage present at VFD to motor terminals



d006	Drive Status	First number represents deceleration (1 = true 0 = false), second number represents acceleration (1 = true 0 = false), third number represents forward or reverse (1 = forward 0 = reverse), and fourth number represents running or stopped (1 = running 0 = stopped)
d007, d008, and d009	Fault Codes	Displays recent fault codes with d007 being the most recent fault and d009 being third most recent fault
d013	Control Input Status	Displays whether the VFD is being told to stop (second number, 0 = stop command), run in reverse (third number, 1 = run reverse command), or run forward (fourth number, 1 = run forward command)

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9. Controls Testing

A. Test All Control Inputs

Begin by attempting to move the turntable in both directions using the selector switch on the control panel door and on each remote you have. Take note which of these moves the table and in what direction. Also note if any of these control inputs do not move the table but make an audible noise from the motor and avoid retesting these until the problem has been identified and rectified.

B. Check Connections

Inspect each control input that did not work, looking for loose connections or damaged wiring. For the door controls, they will be wired directly to the back of the door.

C. Check Limit Switches

- Inspect each limit switch located on each side of the parking slider.
- Limit switches should be energized and have a solid amber light on the back end unless it is actuated by the flag, which in that case no light will be present.
- If no lights are present and the sensors are not being actuated proceed with inspecting the connections in the junction box located in the "Motor Crossmember".

D. Limit Switch Junction Box Connections

Limit Switch Connections should be as follows:

Motor Cable \rightarrow Sensor Cables

Black 1.04 \rightarrow Brown(X2) 1.04 White 1.03 \rightarrow Blue(X2) 1.03 Green 1.02 \rightarrow Black 1.02 Red 1.01 \rightarrow Black 1.01

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Also inspect the terminal blocks at the bottom of the control panel that hold wires of the same designation as those going into the faulty control inputs for loose connections and damaged wiring. Should any of the terminal blocks have loose connections, you will need a small flathead screwdriver to reinsert the wire as shown below.



Use a small flathead screwdriver to pry the terminal towards the wire insert to release clamps and pull screwdriver out to re-clamp wire

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Instructions to Pair Sonoff Smart Switch with Phone (via Wi-Fi) and RF Remote

Pairing with Wi-Fi using eWeLink App:

1. Checklist before using the device:

- a. Your Smart phone or tablet is connected to a 2.4G Wi-Fi with internet.
- b. You have the correct password.
- c. Your smart phone or tablet must have the access to App Store or Google Play.

2. User Guide:

- a. Start by downloading the eWeLink app from App Store for IOS and Google Play for Android.
- b. Create an eWeLink account and Login.
- C. Power up the control panel.

3. Add Device:

			—)))				
C	(4 R1			= 6	CHPRO	R1 ▶	
C	(4 R2	4 M R	-gang Wi-Fi Sma odel: 4CHPROR3 F: 433.92MHz	FCC ID: 2APN54 WI-FI: IEEE 802.1	RF Control CHPROR3	R2 ₽>	•
	(1.5.2	D	C Input: 9-24V perating temps: 10T4	AC Input : 100-: 0 Max. load: 10A/0	240V 50/60Hz Sang 40A/Total	R3 🅪	•
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		AC Input: 100-240V	R1	R2 P P	R3	R4	
6	DC Input: 9-24V	N (L)	NO 000 NC	NO 000 NO			
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- a. Press and hold any of the four switch buttons (labeled R1 R4) for 7 seconds until the Wi-Fi LED fast blinks 3 times and repeats.
- b. Open the eWeLink app, tap the "+" icon at the bottom of the screen to search for a new device. Then click "Quick Pairing", followed by "Add one device." Make sure your Wi-Fi credentials are entered correctly and click "Next". The app will auto-search for the device.
- c. Next, the device will be registered by eWelink and added to your account in 1-3 minutes.
- d. Name the device to complete.

Note: The device may be "Offline" on eWeLink and needs 1 minute to connect to your router and server. When the Wi-Fi LED is on, the device is "Online".

4. RF Remote Settings:

The 4CHPRO Smart Switch supports 433.92MHz RF remotes.

To pair a new remote to the smart switch:

- a. Press and hold button R1 on the switch for 3 seconds, until the Wi-Fi LED indicator turns red and quickly flashes once, and release, then short-press button "A" on the remote. If the Wi-Fi LED indicator turns red and quickly flashes once, the pairing is successful.
- b. Now press and hold button R2 on the switch for 3 seconds, until the Wi-Fi LED indicator turns red and quickly flashes once, and release, then short press button "B" on the remote. If the Wi-Fi LED indicator turns red and quickly flashes once, the pairing is successful.

To clear a programmed button on the remote:

a. Press and hold the channel button to be cleared on the smart switch for 5 seconds until the Wi-Fi LED indicator turns red and quickly flashes twice, and release. Then short-press the button to be cleared on the remote control. If the Wi-Fi LED indicator turns red and quickly flashes once, the button is cleared.



CONTROLS INSTALLATION MANUAL

INSTALLATION GUIDE FOR MOUNTING AND WIRING OF PARKING SLIDER CONTROLS







MOUNTING INSTRUCTIONS

- 1. Mounting the control box should be done before wiring.
- The image on page 2 of the document displays four mounting holes circled in red. Carefully mark these holes onto a wall. Refer to the <u>PS-INSTALL</u> drawing and <u>Step 8 on</u> <u>the Installation Manual</u> for control box mounting location.
- 3. Once the marks are on the wall, move the control box aside and use 3/16" masonry (for concrete wall) or 3/16" regular drill bit (for wood) to bore screw holes.
- 4. Use four ¼" self-tapping, or other appropriate screws to mount the control box to wall.

WIRING INSTRUCTIONS

- Pass the cable from the slider into the box through the cord grip. Observe the wire colors on motor cable and terminal blocks. Connect these 8 wires with matching colors.
 i.e. Black with black, white with white, pink with pink etc.
- 2. Tighten the grip when the required cable length is achieved.
- 3. Use the provided power cord and add any extensions as needed to power on the control box.

