SRS PROGRAMMER

USER'S MANUAL

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 SRS PROGRAMMER OVERVIEW

The REV Robotics SRS Programmer is the key to unlocking all the smart features of the Smart Robot Servo (SRS).

Switching between continuous rotation, standard servo, and custom angular modes is easy as pressing a button. The SRS Programmer can not only program the SRS, but it is also acts as a standalone servo tester for any standard RC servo.

Figure 1-1 SRS Programmer

1.1 FEATURES

The REV Robotics SRS Programmer includes the following features:

- 3 programming modes
  - Continuous rotation
  - Angular limits
  - Reset to factory defaults
- Test modes
  - Automatic sweep
  - Manual position/direction
- Intuitive operation with LED feedback
- Self-powered
- Power-off reminder

1.2 TECHNICAL SPECIFICATIONS

Table 1-1 outlines the technical specifications of the SRS Programmer:

<div align="center">

Table 1-1 Technical Specifications

Mechanical Specifications	
Dimensions	70.5mm x 64.5mm x 35.5mm
Weight	
Electrical Specifications	
Power Source	4 AA batteries
Power Output	6V nominal
Logic Level (Signal Out)	3.3V
Output Pulse Width Range	550µs – 2450µs
Center Pulse Width	1500µs

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1.3 KIT CONTENTS

The REV Robotics SRS comes with the following:

- REV SRS Programmer

2 OPERATING MODES

The SRS Programmer has several operating modes for configuring and testing the REV Smart Robot Servo. The following sections describe each operating mode in detail.

2.1 SWITCHING MODES

Follow the steps below to switch a REV SRS between Continuous Mode and Servo Mode. Figure 2-1 shows the process to select Continuous Mode.

1. Connect the SRS to the programmer.
2. Turn on the programmer.
3. Slide the mode switch to the desired mode: C - Continuous, S - Servo.
4. Press and release the PROGRAM button once.
5. The PROGRAM LED should blink and then stay solid indicating success.
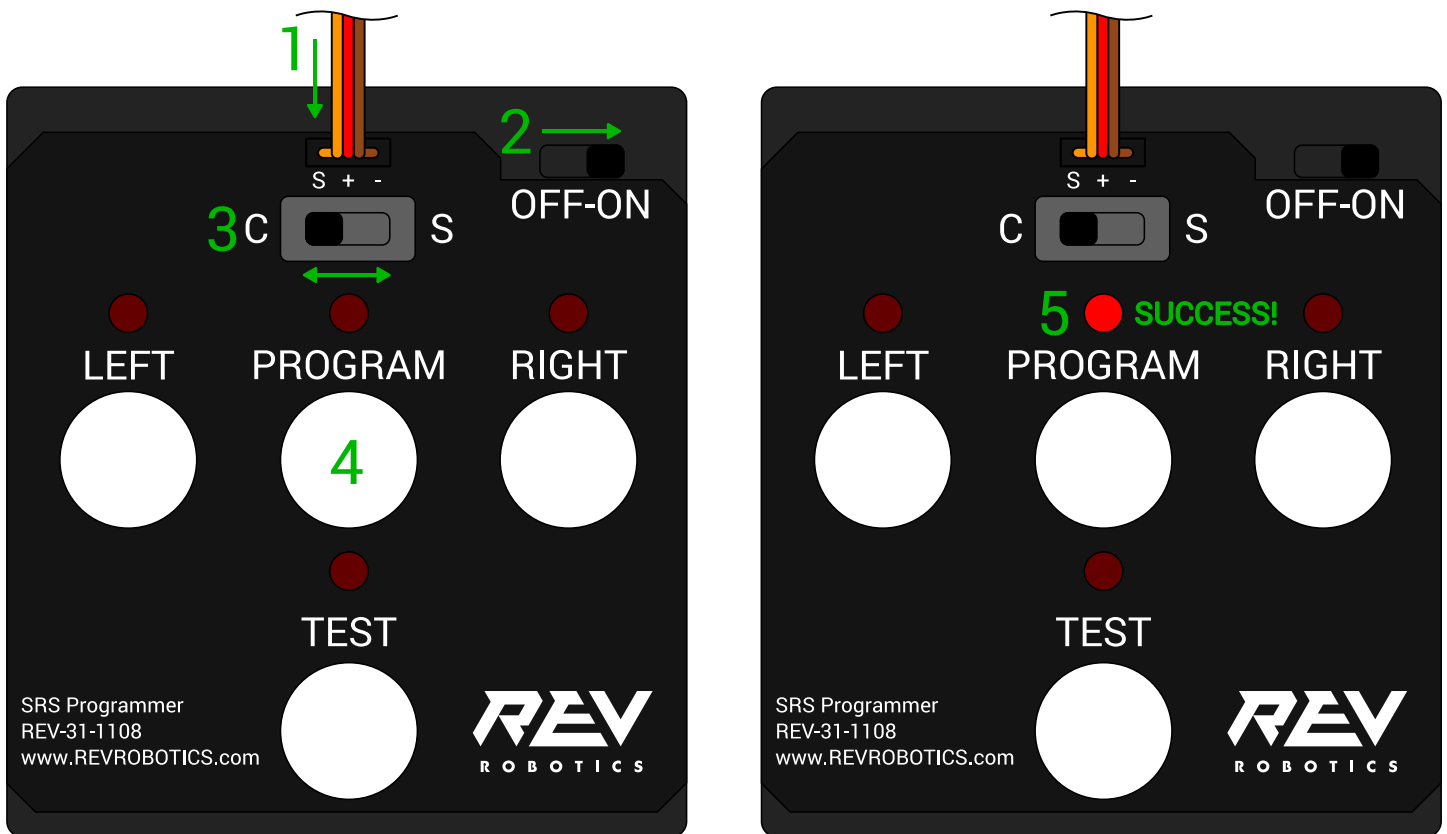

Figure 2-1 Switching Modes

2.2 SETTING ANGULAR LIMITS

Follow the steps below to set the angular limits for the Servo Mode. Figure 2-2 shows an example of setting a left and right limits at -30° and +60° respectively.

Start with the SRS already configured in Servo Mode, see section 2.1 SWITCHING MODES for instructions.

1. Connect the SRS to the programmer.
2. Turn on the programmer.
3. Slide the mode switch to S position.
4. This step is optional, but recommended to make it easier to see the valid limit ranges. Please refer to the SRS User's Manual for more information about the valid limit ranges.
    a. Press and release the TEST button twice to enter Manual Test Mode (see section 2.4 TEST MODES for more information).
    b. Press the PROGRAM button to center the servo at 0°.
    c. Press and release the TEST button once to leave the test mode.
5. Manually rotate the servo to the desired left limit position.
6. Press and release the LEFT button. The LEFT LED will illuminate if the position is valid.
7. Manually rotate the servo to the desired right limit position.
8. Press and release the RIGHT button. The RIGHT LED will illuminate if the position is valid.
9. After both limits are set, press and release the PROGRAM button. The PROGRAM LED should blink and then stay solid indicating success.
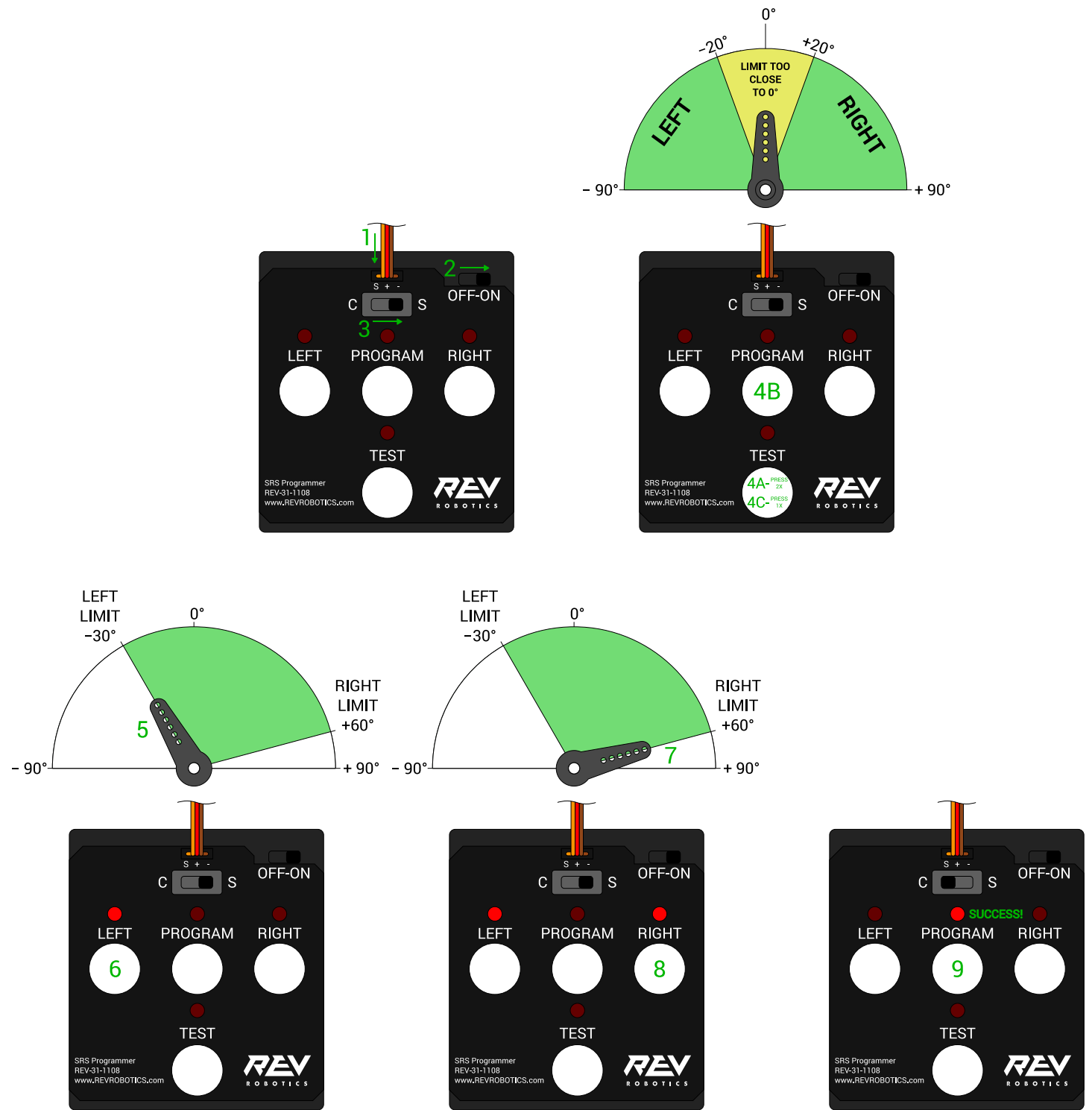
Figure 2-2 Setting Angular Limits

2.3 RESETING TO DEFAULTS

Follow the steps below to reset the SRS to its default mode and limits. Figure 2-3 shows the process to reset to defaults.

1. Connect SRS to the programmer.
2. Turn on the programmer.
3. Slide the mode switch to S position.
4. Press and hold the PROGRAM button for at least 5 seconds.
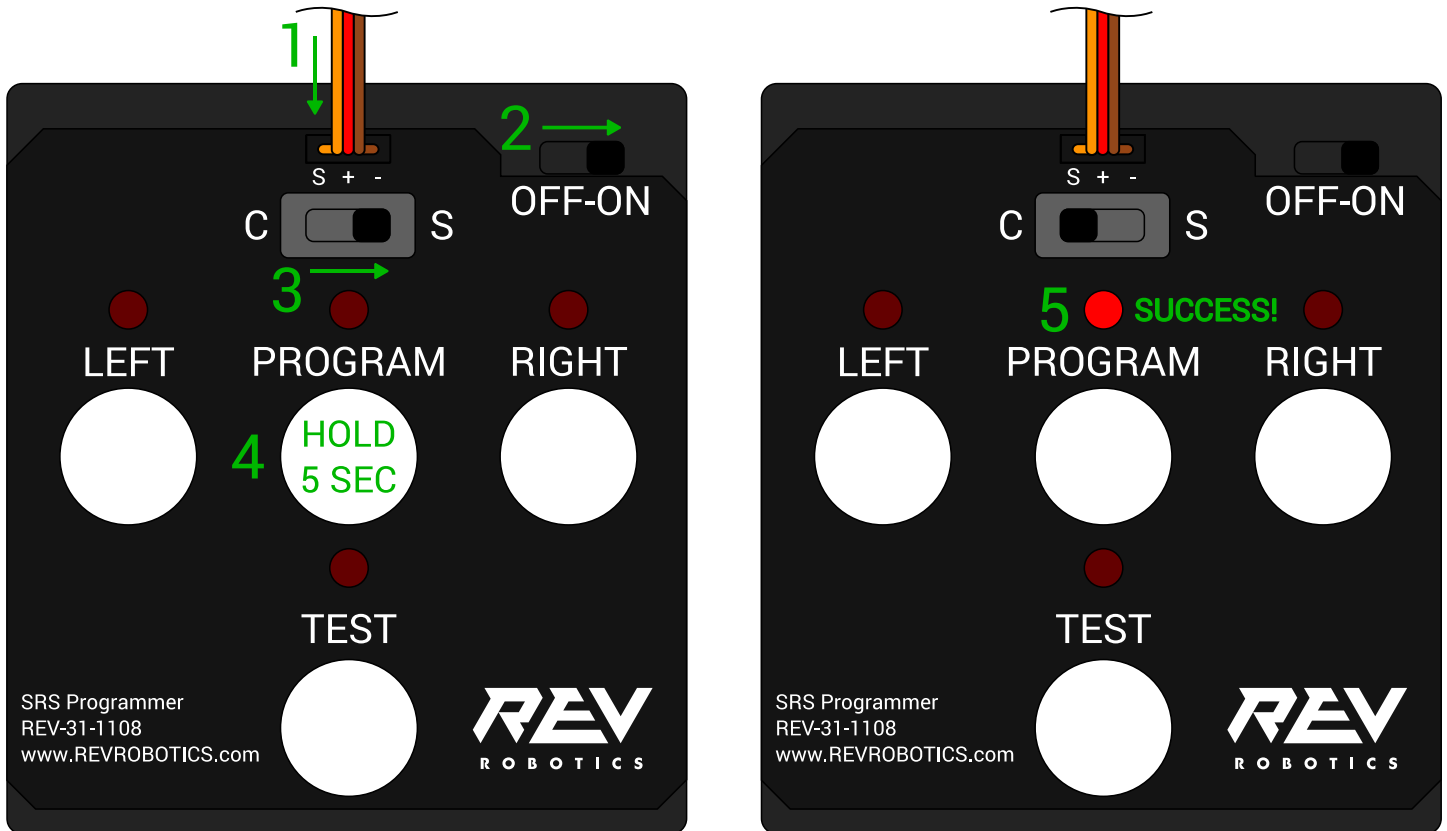5. The LEDs will blink and then the PROGRAM LED will stay solid indicating success.

Figure 2-3 Resetting to Defaults

2.4 TEST MODES

In either Continuous or Servo Modes, pressing and releasing the TEST button cycles through the two test modes:

- 1st press - Automatic Sweep Mode
- 2nd press - Manual Test Mode
- 3rd press - Return to default state

The following sections describe the two test modes in detail.

2.4.1 AUTOMATIC SWEEP MODE

In Automatic Sweep Mode, the SRS Programmer will automatically sweep the SRS through motions appropriate for its configuration. Table 2-1 describes the behavior based on the configured mode.

Table 2-1 Automatic Sweep Mode Behavior

Servo and Programmer Mode	Behavior
Continuous Mode (C)	Sweeping direction and speed
Servo Mode (S)	Sweeping between limits

2.4.2 MANUAL TEST MODE

In Manual Test Mode the LEFT, PROGRAM, and RIGHT buttons control the movement of the SRS. Table 2-2 describes how the SRS will behave based on the configured mode.

Table 2-2 Manual Test Mode Behavior

Servo and Programmer Mode	Button Pressed		
	LEFT	**PROGRAM**	**RIGHT**
Continuous Mode (C)	Counterclockwise rotation	Stopped	Clockwise rotation
Servo Mode (S)	Moves to left limit	Moves to center position	Moves to right limit

2.5 POWER-OFF REMINDER

If the SRS Programmer is left on for an extended period of inactivity, it will blink every LED as a reminder to shut off power.