



Introduction

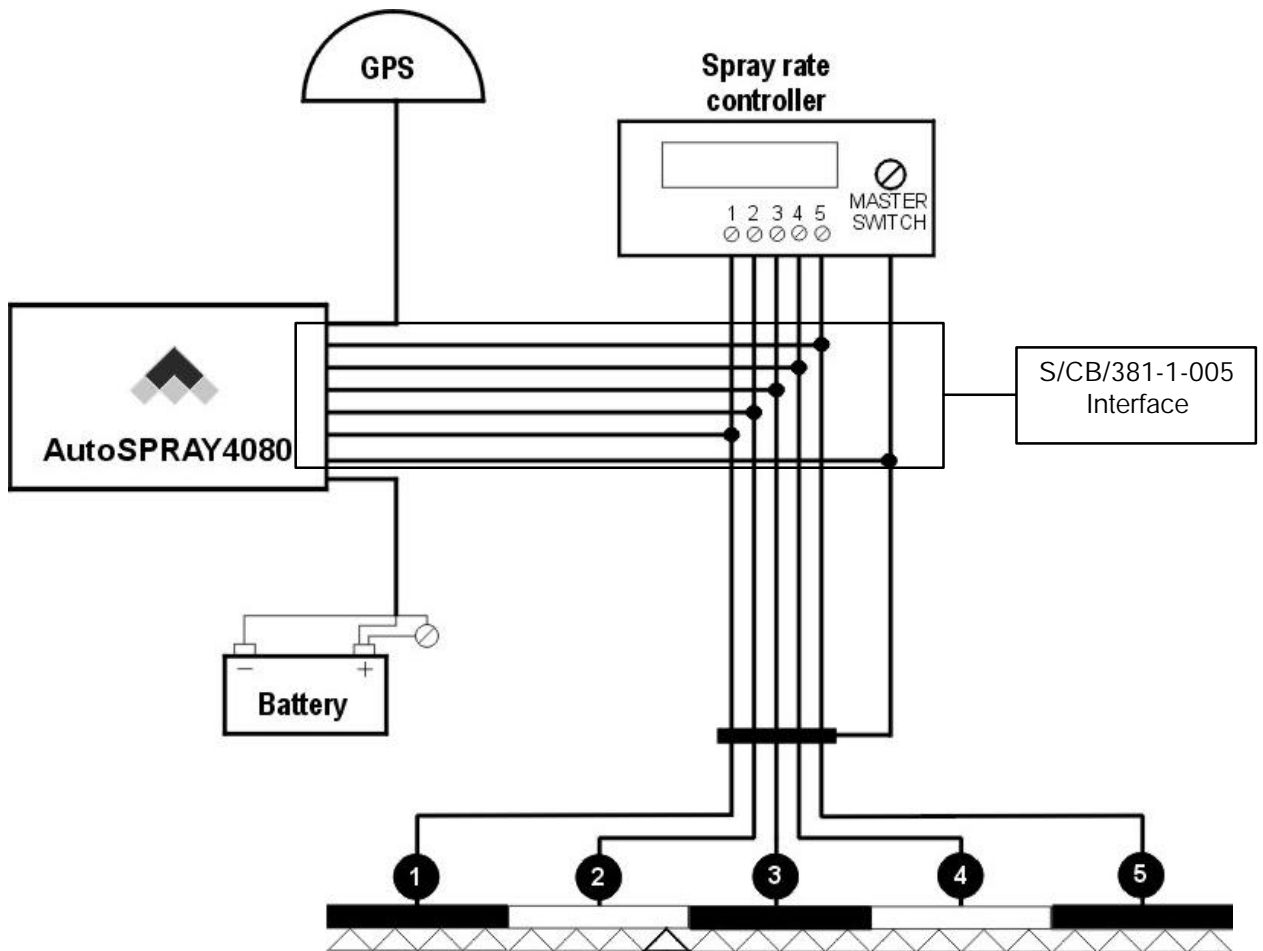
Most spray rate controllers have a single wire for each section from the controllers to the solenoid or valve on the actual boom spray which regulates when the section is ON or OFF. Different controllers will have section switches built into the controller unit, where as others will have separate or remote switches installed elsewhere in the vehicle for ease of use.

The ASC 100 works in a similar format to the remote switches. The ASC 100 will energise individual wires for each section which will open the solenoid or valve for that respective section. When necessary the sections will be de-energised and the sections will close accordingly.

The generic Controller cable S/CB/381-1-005 can be used to control up to eight individual boom sections and a single Master switch. It is not necessary to use all eight sections, or the Master switch if not required.

A schematic of the ASC 100 and how it connects to the spray rate controller and GPS receiver is shown in Figure 2.1

Figure 2.1 Schematic layout of the ASC 100



It is recommended that all electrical wiring should be installed by a qualified fitter/technician. Incorrect wiring may damage the ASC 100 controller, the spray rate controller, or both.



Installation

Step	Instruction
1	Determine the number of sections or valves for the spray rate controller. This is the number of switches on the controller. Record this Table 0-1. Note the ASC 100 will control a maximum of eight (8) sections.
2	Identify the wires that are connected from the solenoid or valves on the boom spray for each respective section. Record the colour and/or identification code for each individual section in Table 0-1. Note that section one is referred to as the left most section as standing at the rear of the boom spray looking forward. The section numbers increase towards the right hand side. Also note that any fence-line or end nozzles should not be included in these sections.
3	Trace the individual wires for each section through to the operators cabin of the vehicle. Then identify a location where the cable can be spliced into the wiring loom. DO NOT CUT the wires at this point in time.
4	Check that for each section wire, as noted in Table 0-1 has +12vDC when the respective section switch is turned ON. This should be done using a voltmeter. It is important to check that each section wire is NOT CONNECTED TO GROUND when the section switch is turned OFF.
5	Join the matching cable section wire to the boom spray section wire as noted in Table 0-1. It is important that a good reliable connection is made between the two wires. It is recommended that the connecting wires be soldered together and insulated accordingly. Any section wire from the cable that is not connected should be insulated from all other wires.
6	The cable has provision to use the Master switch on the spray rate controller for switching the ASC 100 as well as the spray rate controller. Identify the wire that is connected to the Master Switch on the spray rate controller. This should be done using a voltmeter.
7	Join the matching cable Master wire to the boom spray Master wire as noted in Table 0-1. It is important that a good reliable connection is made between the two wires. It is recommended that the connecting wires be soldered together and insulated accordingly. If the Master wire is not used from the cable it should be insulated from all other wires.
8	The spray rate controller should be tested for typical function before connecting the cable to the ASC 100. Subsequent to the test being successfully completed the cable should be connected on the rear panel of the ASC 100 controller. The cable will only connect one way to the controller.
9	Start the ASC 100 as directed in the User Manual and test the functionality of the system.

If no Master switch is available the ASC 100 can operate with external switches (optional items) or the front panel membrane switch. The Master switch must be configured in the ASC 100 controller.



Table 0-1: Generic cable notation



Pin	Function	Cable	
		Colour	Label
1	None	Red	Power (Not Connected)
2	None	Black	Ground (Not Connected)
3	Section 1	Yellow	Section 1
4	Section 2	Grey	Section 2
5	Section 3	Green	Section 3
6	Section 4	Blue	Section 4
7	Section 5	Magenta	Section 5
8	Section 6	Pink	Section 6
9	Section 7	Brown	Section 7
10	Section 8	White	Section 8
11	Master Switch	Yellow/Red	Master

Testing the cable

In order to test the cable for functionality it will be necessary to undertake two different tests. The tests will require that the ASC 100 controller be interfaced to a GPS receiver and that the spray rig be partially filled with water to undertake an in-field test.

Test the Master Switch

The first portion of the test will determine that the Master switch is correctly recognised by the ASC 100.

Step	Instruction
1	Use Isolation Power Switch (IPS) to power ON, this will take approximately one minute.
2	Set the Master Switch to the applicable setting (see the ASC 100 User Manual) in the PARAMETERS - CONTROL menu. The Master Switch must be set to EXTERNAL for the switch on the spray rate controller to be set as the MASTER. Return to the Main menu, the LCD display will show WORKING .
3	When the WORKING menu is displayed, use  to move to the Status sub-menu.
	
4	Switch the spray rate controller Master switch ON
5	The Status M=on should display on the LCD display panel.
6	Use the Master Section switch to toggle OFF.
7	The Status M=off should display. If Status M= value does not change, check that the cable has been installed correctly.
8	Conduct the field test as detailed in the following sections.

A delay may occur between the switching of the Master Section switch and when the Status M= is displayed on the ASC 100. This delay is due to the type of electrical circuit switching used within the spray rate controller.



Test the ASC 100 & Boom Spray Sections

The second part of the test will require the spray rig to be in a field where the boom spray can be operated in a typical manner.

Step	Instruction
1	Use Isolation Power Switch (IPS) to power ON, this will take approximately one minute.
2	Check that the Power and GPS LEDs on the ASC 100 front panel are green.
3	Turn the spray rate controller ON, all boom section switches are to be in the OFF position.
4	Turn the spray rate controller Master switch to the ON position.
5	Drive the vehicle forward in a straight line and observe that all boom sections automatically switch ON. If the sections do not switch ON consult the ASC 100 User Manual and/or check that all cabling is correct.
6	Drive the vehicle around so that it crosses the portion of the field sprayed and observe that all sections of the boom switch OFF and the switch ON in the correct order, see figure 2-2. The sections may not switch OFF at exactly the correct location as the boom spray parameters may still require tuning (see the ASC 100 Manual). If the sections all switch ON & OFF in the correct order the field test have been successfully completed. If the sections do not switch OFF in the correct order check the cabling.
7	The ASC 100 system should now be tuned for the boom spray parameters as noted in the User Manual.

Figure 2-2: Testing Vehicle overlaps

