



**Market Central<sup>®</sup>**  
[www.secureswitch.com](http://www.secureswitch.com)

**19 North Main Street, Houston, PA 15342 USA**  
**412.494.2800** **CAGE 1BGJ7**



## **RS232 Remote Control Unit**

Part # 5101189

Market Central Inc., 19 North Main Street, Houston, PA 15342  
Phone: (412) 494-2800, Fax: (412) 494-5550, [www.secureswitch.com](http://www.secureswitch.com) CAGE Code 1BGJ7  
Copyright © 2010. Market Central, Inc. All rights Reserved.  
Market Central<sup>®</sup> and SwitchMaster<sup>®</sup> are registered trademarks of Market Central, Inc.

**FEDERAL COMMUNICATIONS COMMISSION  
AND INDUSTRY CANADA  
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

## **1. Specifications**

**Connectors:** (1) 3.5-mm DC power input jack (center positive)  
(1) DB9 female for RS232 interface pinned as DCE  
(1) Six position terminal block for dry contact closure outputs.  
(1) Eight position terminal block for remote status dry contact inputs

**Indicators:** (1) LED for power, (3) LEDs for remote status indicators (A, B, and C)

**Temperature:** 32 to 122°F (0 to +50°C) - operating,  
-4 to 158°F (-20 to +70°C) - storage

**Relative Humidity:** up to 90%, non-condensing

**MTBF:** >100,000 hours or 1,000,000 switching cycles

**Power:** 100-240VAC, 50/60-Hz wall mount supply, 12VDC output

**Size:** 5.5"D x 5.1"W x 1.5"H

**Weight:** 1.5 lb including external wall mount supply

**Remote Status Inputs:** 12 VDC supplied thru approximately 160 ohm pullup resistance to provide wetting current for external dry contacts being monitored. Resistance of external dry contact and associated cable not to exceed 100 ohms.

**Dry Contact Outputs:** 50 milliohms typ. contact resistance, maximum switching power 30 W (30 VDC @ 1A resistive)

## **2. Introduction**

The RS232 Remote Control Unit (RS232 RCU) is a general purpose serial to latching relay dry contact closure converter. It accepts simple ASCII text based RS232 serial commands to control three latching relay dry contact closure outputs. The RS232 RCU's latching relay dry contact closure outputs are sequenced to provide a "make before break" function. The RS232 RCU also continuously monitors the status of three pairs of external dry contact closure inputs. Status LEDs on the front panel continuously display the connection state of these external dry contact closures, and the user can additionally query their status via the RS232 serial interface.

Note that the rear panel connectors on the 5101189 part number version of this product have been labeled to match that of the SecureSwitch Revision B product's Remote Status Output and Remote Control Input connectors to allow easier installation & operation when used with the SecureSwitch. The remainder of this manual describes the RS232 RCU operation when used with the SecureSwitch.

### 3. Installation

The DB9 serial port on the RS232 RCU is configured as DCE for connection to a computer or similar DTE device. The RS232 serial port is set to 9600 baud, no parity, 8 data bits, 1 stop bit, with no flow control. The DSR and CTS signals are supported in case they are needed by the attached computer. Use a DB9 straight through cable to connect the RS232 "Terminal" interface on the front of the RS232 RCU to a computer or other DTE device's serial port. The table below shows the pinout of the RS232 RCU's DB9 connector.

DB9 Pin	Signal	Direction
2	Received Data	Output to Computer
3	Transmitted Data	Input from Computer
5	Signal Ground	Not-Applicable
6	Data Set Ready	Output to Computer
8	Clear To Send	Output to Computer

To control a SecureSwitch using the RS232 RCU, connect the 6 position terminal block connector on the RS232 RCU to the 6 position Remote Control Input terminal block connector on the SecureSwitch using a straight through cable (only pins 2, 4, 5 and 6 are used on the 6 position terminal block). Connect the 8 position terminal block connector on the RS232 RCU to the 8 position Remote Status Output terminal block connector on the SecureSwitch (only pins 1, 2, 4, 5, 7 and 8 are used on the 8 position terminal block), again using a straight through cable.

**Note:** When in the closed position, the total resistance of each dry contact closure and associated cable that the RS232 RCU is monitoring must be less than 100 ohms in order for the RS232 RCU to be able to reliably determine the contact closure status.

Plug the external power supply into the RS232 RCU, and then plug the supply into a source of AC power. Installation is now complete and the unit is ready for operation.

### 4. Operation

When the RS232 RCU is powered ON, it will illuminate the Power LED indicator on its front panel and will display the state of the rev B SecureSwitch status contact outputs that are connected to its 8 position terminal block inputs. The RS232 RCU will continually update its LED indicators to reflect the connection state of the rev B SecureSwitch. For example, if port A is selected on the rev B SecureSwitch, its A-A status contact outputs will be closed. This will cause the A LED indicator on the RS232 RCU to be illuminated. Likewise, if port B is selected on the SecureSwitch, the B LED indicator will illuminate on the RS232 RCU, and if port C is selected, the C LED indicator will illuminate. If there are open or shorted connections between the SecureSwitch status contact outputs and the RS232 RCU 8 position terminal block inputs, either no status LEDs on the RS232 RCU will be lit, or multiple LEDs will be lit.

When the RS232 RCU is ready to receive serial commands, it will output a prompt character ">", and drive the CTS signal active High on its DB9 connector to indicate that it is ready. While the RS232 RCU is processing commands, the CTS signal will be driven inactive Low. Once it has completed processing and is ready to receive additional commands, it will assert CTS active High again. Note that the DSR signal will be driven active High when power is applied and will remain active high until power to the RS232 RCU is removed.

Commands are not case sensitive and can be entered as either upper or lower case ASCII text. The RS232 RCU echoes each character it receives back to your terminal, allowing the user to backspace to correct typing errors. Each word on a command line must be separated by a single SPACE character. The command is processed when you press the ENTER KEY.

Commands supported are shown in the following table: (each command must be followed by a carriage return character)

Command	Response	Comments
set x	Port x	For x = A, B or C, the associated A, B or C contact output on the RS232 RCU will be closed (connected to the G pin) and the other contact outputs will be open. This will cause the attached SecureSwitch to change its connection state to the selected port.
set none	Port None	All contact outputs on the RS232 RCU will be open. When the RS232 RCU is in this state, the front panel pushbutton switches on the attached SecureSwitch can be used to manually operate the SecureSwitch. The RS232 RCU will still continuously monitor the SecureSwitch status contact outputs.
get	Port x, Port None, or Fault	The RS232 RCU will respond with the connection status of the SecureSwitch Remote Status Outputs. The response will be Port A if the A-A pair of status contacts are closed on the SecureSwitch. Likewise the response will be Port B or Port C if the B-B or C-C pair of status contacts are closed. The response will be None if all three pairs of status contacts A-A, B-B and C-C are open on the SecureSwitch. The response will be Fault if two or more pairs of status contacts are closed on the SecureSwitch.
help	(see example output below)	The RS232 RCU responds with its firmware revision and a list of available commands

### Example output of “help” command.

```
>help
RS232 RCU, Rev. A
Commands:
set x (x = A, B, C, or None)
get (returns status, Port x, Port None, or Fault)
help (displays current commands and software revision)
>
```

## 5. Troubleshooting

### 5.1 Calling Your Supplier

If you determine that your RS232 RCU is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Market Central, Inc. at (412) 494-2800

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description of the problem, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular applications that, when used, appears to create the problem or make it worse.

## WARRANTY AND LIMITATION OF LIABILITY

Market Central, Inc. ("Market Central") warrants that the products manufactured and sold by it or by one of its authorized resellers will, when sold, be free of defects in workmanship or material under normal service and use. Products which have been changed or altered in any manner from their original design, or which are improperly or defectively installed, serviced or used, are not covered by this warranty. If any failure to conform to this warranty becomes apparent during a period of one (1) year after date of sale, Market Central shall, upon prompt, written notice and compliance by the customer with such instructions as it shall give with respect to the return of defective products or parts, correct such non-conformity by repair or replacement of the defective part of parts. Correction in the manner provided above shall constitute a complete fulfillment of all obligations and liabilities of Market Central with respect to the quality of said products.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF QUALITY, WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE.

THIS WARRANTY AND THE OBLIGATIONS AND LIABILITIES OF MARKET CENTRAL HEREUNDER ARE EXCLUSIVE AND IN LIEU OF AND BUYER HEREBY WAIVES ALL OTHER REMEDIES, WARRANTIES, GUARANTIES OR LIABILITIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE (INCLUDING WITHOUT LIMITATION ANY OBLIGATIONS OF MARKET CENTRAL WITH RESPECT TO FITNESS FOR PURPOSE, MERCHANTABILITY AND INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR LOST PROFITS) OR WHETHER OR NOR OCCASIONED BY MARKET CENTRAL'S NEGLIGENCE. THIS WARRANTY SHALL NOT BE EXTENDED, ALTERED OR VARIED EXCEPT BY A WRITTEN INSTRUMENT SIGNED BY A DULY AUTHORIZED OFFICER OF MARKET CENTRAL.