MODEL 4407
Single Channel RJ45 A/B Switch with Dual RS-232 Remote

Catalog# 306000

Electro Standards Laboratories

ADVANCED SYSTEMS DESIGN & SERVICES

INFORMATION

Electro Standards Laboratories
36 Western Industrial Drive
Cranston, RI 02921 – USA
Tel: 401.943.1164 Fax: 401.946.5790

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INTRODUCTION

The PathWay® Model 4407 Single Channel RJ45 A/B Switch with Dual RS-232 Remote allows the user the capability of sharing a single port interface device, connected to the “COMMON” port, among two other devices, connected to the “A” and “B” ports, with remote access functionality. The Model 4407 is packaged in a slim desktop style enclosure.

The switch may be controlled locally by manually operating the front panel pushbutton or remotely from either of two RJ45 Serial Interface Remote ports located on the rear of the unit. The front panel LED display indicates the switch position and unit power status.

Features:

- The switch ports are transparent to all data.
- All (8) pins of the RJ45 interface are switched via break-before-make electromechanical relays.
- The unit maintains last set position on power loss and continues to pass data.
- Front panel pushbutton control.
- Remote RS-232 ASCII commands that allow the user to control switch position, obtain switch status, query model number, and query firmware version number.
- Dual Remote Serial ports for multiple and simultaneous Remote access.
- Front panel LED’s display present position and power status.

INSTALLATION

This section describes the physical connections required to start operating the Model 4407 switch.

Model 4407 Rear Panel

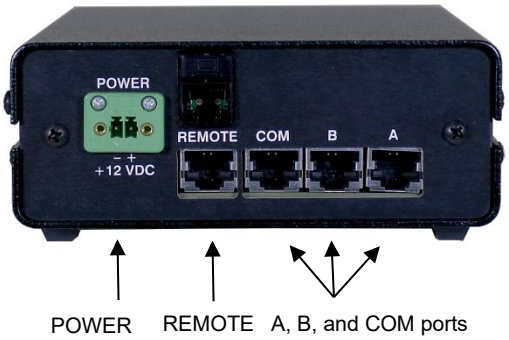

Figure 1: Model 4407 Rear Panel

The rear panel view of the switch is shown in the above figure. On the rear of the switch are the following ports:

- **POWER** – Phoenix (F), External Power Supply Input connector.
- **REMOTE** – RJ45 (F), Remote Serial ports.
- **COM** – RJ45 (F), the "COMMON" or shared device port of the switch.
- **A** – RJ45 (F), the "A" device port of the switch.
- **B** – RJ45 (F), the "B" device port of the switch.

Power Supply

After all the proper connections have been made, plug the Model 4407 into a 100VAC-240VAC, 50Hz-60Hz wall receptacle using the supplied 12VDC, 500mA, UL listed and LPS approved, 2-prong US non-polarized NEMA 1-15P plug wall mount power supply, P/N 516682.

Option: Wide Range Power Module, (Cat. No. 517277), 100VAC/240VAC, 50Hz/60Hz, IEC 60320 C14 inlet, can be ordered for use in place of the standard NEMA 1-15P plug power module that is included with the unit. Ideal for international applications.

Upon power up the Model 4407 will process its power up routine. When the routine is done the front panel LED's will indicate the present position of the unit. At this point the unit is ready for operation.

Remote Control Port Connection

These are custom RJ45 ports. Please pay close attention to the connector pin/signal list and do not use this port for network communications.

Note that the pinout for both RJ45 Remote ports is identical.

Pin	Function
1	Not connected.
2	Not connected.
3	Not connected.
4	RS-232 – Signal Ground (SG) [Gnd]
5	RS-232 – Receive into unit (RD) [Input]
6	RS-232 – Transmit from unit (TD) [Output]
7	Not connected.
8	Not connected.

Table 1: Complete pinout of the RJ45 Remote Port

Note: Pins labeled as “[Gnd]” in Table 1 are pins that are internally tied together and connected to ground.

OPERATION

The Model 4407 can be operated either by the front panel or through its Remote port.

Model 4407 Front Panel

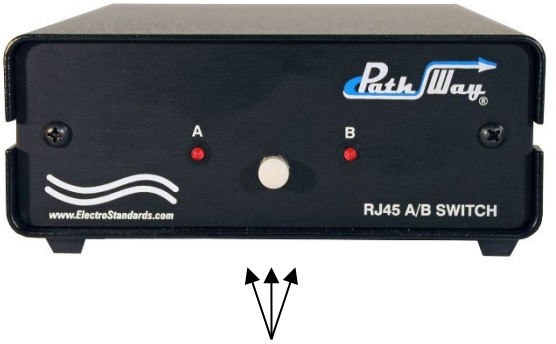

Figure 2: Model 4407 Front Panel

Manual Control

The front panel view of the switch is shown in the above figure. On the front of the switch are the following controls and indicators:

- **A, B INDICATORS** – Red LED's indicate the switch position as well as the power status.
    - The LED in the steady state indicates the position of the switch.
- **MANUAL PUSHBUTTON** – The front panel pushbutton allows the switch position to be changed.
    - Depressing and releasing the pushbutton allows the user to toggle the switch position.

Remote Control Setup

Remote switching of the unit is accomplished through the RS-232 Serial Remote Control ports located on the rear of the Model 4407. These ports may be connected to the RS-232 port on a computer or any other device capable of sending ASCII characters. (See installation section for cable information.) Use a terminal emulation software program, such as Hyperterminal, with the following configuration to connect to the Model 4407:

Parameter	**Value**
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

Table 2: Serial Communication Configuration

Remote Control Commands

All commands are ASCII CONTROL commands. A CONTROL command is created by pressing and holding the [CTRL] key and the designated character key simultaneously. For example, to create the CTRL-A command, simply press the [CTRL] and [A] keys on the keyboard simultaneously then release both.

Do not press the enter key at the end of a command. See Table 3 for details. All responses are terminated with a carriage return (‘\r’) followed by a new line feed (‘\n’).

A note to those programming their own systems to control this switch automatically: The ASCII Control commands are represented as the decimal equivalent of the numerical position of that letter in the alphabet, which can then be translated to hex. For example, CTRL-A translates to ‘1’ in decimal or 0x01 in hex, since A is the 1st letter of the alphabet. CTRL-V, on the other hand, translates to ‘22’ in decimal, and 0x16 in hex, since it is the 22nd letter of the alphabet.

Command	Parameter	Function	Response
CTRL-A	N/A	Switch to A	XXXX Position: A, (switched by <Pushbutton/Serial>)
CTRL-B	N/A	Switch to B	XXXX Position: B, (switched by <Pushbutton/Serial>)
CTRL-P	N/A	Query for Current Status	XXXX Position: <A/B>
CTRL-I	N/A	Enable/Disable Autosend of Switch Position	XXX Autosend of all updates to all serial and LAN interfaces has been <enabled/disabled>
CTRL-N	N/A	Query Serial Number	M4407, Serial Number: XXXXXX
CTRL-V	N/A	Model Number and Firmware Version	M4407, Firmware Version x.x.x, Compiled <Date>

Table 3: Remote Control Commands

Error conditions not covered in Table 3:

- Issuing a command not found in Table 3 will be ignored and no response will be sent.

Switch Position on Power Down

If power to the Model 4407 is lost, the switch will maintain its present position and continue to pass data. Upon power restore, the unit will remain in the position it was in at power down.

TROUBLESHOOTING

Described below are some common troubleshooting steps and solutions. If following the troubleshooting guide does not solve the problem, please contact Technical Support for further assistance.

Switching Issues

Pressing and releasing the front panel pushbutton does not cause the unit to switch.

- Check that the unit is properly powered and that the front panel LED's indicate the present position.

Commanding the unit remotely to switch does not cause the unit to switch.

- Check that the Remote Connection is still active. Check if any response to commands is received. If no response is received, troubleshoot the Remote Connection.

Remote Issues

The switch does not accept Remote Commands.

- Check that the physical connections and pinouts are correct.
- Check that the unit is powered on and ready to operate.
- Ensure that the terminal software is configured with the correct parameters. See Table 2 on page 7.

The switch accepts commands and can switch, but no response is received.

- Check that the transmit line of the unit is connected to the receive line of the communicating device. See Table 1 on page 5 for pinout information.
- Ensure that a valid command is being sent as there is no response sent for an invalid command. See Table 3 on page 8 for the list of commands.

The switch does not operate correctly by Remote and responds with garbled text.

- Ensure that the correct baud rate and other serial communication parameters are correct. See Table 2 on page 7.

SPECIFICATIONS

Size
Width: 5.25” [13.4 cm]
Height: 2.0” [5.1 cm]
Depth: 7.25” [18.5 cm]
Weight: 1.2 lbs [0.6 kg]

Environment
Operation Temperature: 0°C to 50°C
Storage Temperature: -40°C to 85°C
Humidity: 10% to 90% without condensation

Power Requirements
DC Voltage: 12VDC
DC Current: 150mA (peak), 40mA (nominal)
AC Power: 2W (peak), 1W (nominal)

Signal Port Ratings
Max Power: 60W, 125VA
Max Voltage: 220VDC, 250VAC
Max Current: 2A

Signal Port Interfaces
(3) RJ45 (F) Signal ports

Signal Port Channels
(1) Channel of RJ45 A/B/COM ports

Signal Port Pins Switched
RJ45: Pins 1-8

Remote Port Interfaces
(2) RJ45 (F) RS-232 Serial Ports. 9600-8-N-1-N

Front Panel Control and Indicators
(2) Red LED’s
(1) Pushbutton

Power Supply 516682
Input: 100-240VAC, 50/60Hz, 0.2A
Output: 12VDC (regulated), 0.5A

CUSTOMER & TECHNICAL SUPPORT

Customer Support

For customer assistance, ordering assistance, or communications cables of any length or configuration, please contact Electro Standards Laboratories, (877) 943-1164 and ask for sales/customer support.

Technical Support

For technical support with unit operation, cable configuration, etc., please contact Electro Standards Laboratories, (877) 943-1164 and ask for technical support. Please have the unit model number and serial number available when you call.