

JFW Industries, Inc.



75SA-030
OPERATING MANUAL

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Additional Documents:

- Mechanical Outline Drawing
- Specification Sheet
- Sample Ethernet Configuration Session for JFW Model 75SA-030

1 - Introduction

The JFW model 75SA-030 test system consists of ten solid-state 1P4T reflective switches. The unit is controlled remotely via Ethernet control. The switches come up in the ALL OFF position when the unit is powered on.

In the rear of the manual is located a CD. The CD contains the following:

- 1) 75SA-030 Manual.PDF
- 2) 75SA-030 Specification Sheet.PDF
- 3) 75SA-030 Outline Drawing.PDF
- 4) Sample Ethernet Configuration Session for JFW Model 75SA-030.PDF
- 5) JFW test program (75SA-030.EXE)

2 - Remote Control

The remote control is achieved through the Ethernet connection located in the rear of the enclosure. There are two commands for controlling the 75SA-030. The first is the set switch command (SS). The second is the read switch (RS). Both of these commands are described in greater detail in the "Command Set" portion of this manual. If commands are sent incorrectly to the unit, you will receive an error message.

3 - Mechanical Specifications

The 75SA-030 is designed in a standard 19" rack enclosure assembly to remain compatible with most laboratory test racks. A mechanical outline drawing is included in Appendix A. This outline drawing details all necessary package dimensions and connector layouts.

The unit is AC powered via a 3-prong receptacle on the rear panel. A standard power cord is supplied with the unit. The power supply itself is a universal AC power supply that can handle input AC voltages from 85 VAC to 250 VAC (47-63 Hz).

The 75SA-030 is also AC current protected by use of a 2 Amp "Slo-Blo" AC fuse also located on the rear panel next to the AC power receptacle. The fuse is field replaceable in the event the fuse failing. The fuse itself is a 5x20 mm "Slo-Blo" type fuse and can be ordered through JFW or directly from Littelfuse. The Littelfuse part number is #215-002. The JFW part number is #025-021.

4 - Ethernet Configuration Cable

Included with the system should be one “Null Modem” 10 ft. cable (JFW #012-174 or L-Com #CSNULL9MF-10). This cable is used to interface with the Ethernet Configuration Port. The female connector will plug into the serial port on most PC’s, and the male connector will mate to the back of the 75SA-030.

5 - Ethernet Configuration Information

This unit comes pre-programmed to the following settings:

I.P. Address	192.168.1.177
Gateway	192.168.1.1
Netmask	255.255.255.0
Port	3001 (hard-coded into the unit and can not be changed)

Important Note: An additional document “Sample Ethernet Configuration Session for JFW Model 75SA-030.PDF” comes with this manual and is located on the CD in PDF format. This sample session shows step by step how the Ethernet port is configured.

Open up a terminal session through your computer’s COM port using a program like HyperTerminal. You must use the Ethernet Configuration Cable to make the physical connection from your COM port to the “Ethernet Config. Port” on the rear of the 75SA-030. The terminal session should use the following COM port settings:

Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

You can verify a successful connection by typing “Hello World” in the terminal window. You should receive an echo back from the 75SA-030. The SET commands listed below can then be used to change the network properties.

SET IP xxx.xxx.xxx.xxx	changes the I.P address
SET NETMASK xxx.xxx.xxx.xxx	changes the Netmask
SET GATEWAY xxx.xxx.xxx.xxx	changes the Gateway
SET NAMESERVER xxx.xxx.xxx.xxx	changes the Nameserver

6 - JFW Test Program

The JFW test program is compatible with Windows 98/2000/XP. Nothing has to be installed onto your computer in order to run the JFW test program. Just copy the executable file (75SA-030.EXE) from the CD that comes with this manual to any location on your computer. Run the executable file 75SA-030.EXE to start the program.

The test program can be used to verify functionality of the 75SA-030. A picture of the test program is shown below. Before exiting the program, it is a good idea to close any connections you have made while using the software. This is done by clicking on the “Disconnect Ethernet” button.

The test program allows the user to control the switches contained in the 75SA-030. It shows the commands as they are sent and the responses from the unit. It also allows the user to set and read each switch state. You must enter the IP address (that you have programmed into the unit via the Ethernet programming port on the back of the box) into the IP address window. The port default setting is 3001. The commands are very straightforward, just enter in the switch number and port number in the appropriate blanks and click. You will see the command you sent in the Data Sent window and any response in the Data Received window. There is no response to the “set switch” command. A “set switch” command can be verified by a query of the switch state using the “read switch” command.



7 - Command Set

The command set is as follows:

Set Switch

Syntax: SSx y <CR>
 x = number of the switch to control
 y = port number to set the switch to
 <CR> = carriage return

Description: This command sets switch “x” to port “y”.

Examples: SS1 0 <CR> Sets switch #1 to it’s ALL OFF state.
 SS2 1 <CR> Sets switch #2 to the RF path COMMON to J1.
 SS3 2 <CR> Sets switch #3 to the RF path COMMON to J2.

Notes: There must be a space between the “x” and “y”.
 There must not be a space between the “SS” and the “x”.
 “x” must be between 1 and 10.
 “y” must be between 0 and 4.
 Command is not case-sensitive, but must be terminated by a carriage return.

Read Switch

Syntax: RSx <CR>
 x = number of the switch to query
 <CR> = carriage return

Description: This command returns the port setting for switch “x”.

Examples: SS4 0 <CR> Sets switch #4 to it's ALL OFF state.
 RS4 <CR> Reads setting of switch #4. Sends back “None”.

 SS4 2 <CR> Sets switch #4 to the RF path COMMON to J2.
 RS4 <CR> Reads setting of switch #4. Sends back “2”.

 SS4 3 <CR> Sets switch #4 to the RF path COMMON to J3.
 RS4 <CR> Reads setting of switch #4. Sends back “3”.

Notes: There must not be a space between the “RS” and the “x”.
 “x” must be between 1 and 10.
 Command is not case-sensitive, but must be terminated by a carriage return.

Identification

Syntax: IDN <CR>
<CR> = carriage return

Description: This command returns some basic identification information.

Examples: IDN <CR> Sends back “75SA-030 Rev.0”

Notes: The revision refers to the firmware revision.
Command is not case-sensitive, but must be terminated by a carriage return.

8 – Manual Control

Manual control is handled by the 12-button keypad located on the front panel of the 75SA-030.

		Switch ↓	Switch ↑		Remote Mode	
Port None	Port J1	Port J2	Port J3	Port J4	Manual Mode	

The bottom two lines of the display always show the current state of the switches. The number on the left side of the dash corresponds to one of the switches (SW 1 – SW 10). The number on the right side of the dash corresponds to the port that switch is set to. An “N” indicates the common is connected to None of the ports.

To select a switch, press the SWITCH DOWN and SWITCH UP buttons until the switch you wish to control is displayed on the second line from the top. You may now press one of the Port buttons (Port None, Port J1, Port J2, Port J3, Port J4) to change the state of the switch.

You may also change between manual and remote mode by pressing the appropriate keys, located on the right side of the keypad.

9 - TROUBLESHOOTING

Initialization Time

After the 75SA-030 has been turned on, it will take at least 10-15 seconds for the unit to completely initialize itself. If you send an Ethernet command while it is still initializing, the command will not be executed.

Software Error

If the 75SA-030 does not work in your system, it is best to test the unit with the JFW test software. If the unit works with the JFW test software, then the problem is most likely in your system's software setup.

If the unit is not responding to remote commands, ensure that it is in the REMOTE mode. The mode is displayed on the LCD located on the front of the unit.

It is very important that the command messages follow the specified format as detailed earlier in this manual. The commands must be terminated with a carriage return.

Check your IP address, Gateway, Netmask, and Port Number. Remember that the Port Number is hard-coded to 3001 and can not be changed.

Internal Error

If communication between the host computer and the 75SA-030 has been established and the software has been verified as working properly, then the problem lies internal to the unit either with the control board or one or more RF components. Please consult the factory at this point for possible further troubleshooting instructions (sales@jfwindustries.com).

AC Voltage Fuse

There is an AC voltage fuse located on the back panel. This fuse is rated at 250 Volts/2 Amps. If the fuse is blown, it can be replaced per the Littelfuse #215-002 or JFW #025-021.