



MODEL 7242S
Single Channel DB25 A/B Switch,
with Telnet

Catalog# 304242S



Electro Standards Laboratories
ADVANCED SYSTEMS DESIGN & SERVICES

INFORMATION



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INTRODUCTION

The PathWay® Model 7242S Single Channel DB25 A/B Switch with Telnet 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 7242S is enclosed in a 1U, full rack size, all metal, black chassis designed to provide EMI/RFI shielding and fit in a standard 19" rack.

Remote access can be accomplished using an Ethernet 10Base-T connection and Telnet.

Proper authentication is required for remote access via the 10Base-T connection. Users can then monitor status, lockout front panel pushbutton control, and control switch position.



FEATURES:

- The switch ports are transparent to all data.
- All (25) pins of the DB25 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.
- Control of the switch position from a 10Base-T LAN Ethernet environment. IP Addressable.
- Remote Control Telnet Command Interface that allows the user to control switch position, lockout front panel operations, and obtain switch status.
- Remote control of the switch is password protected.
- Front panel LED's display present position and power status.

INSTALLATION

This section describes the physical connections required to start operation.

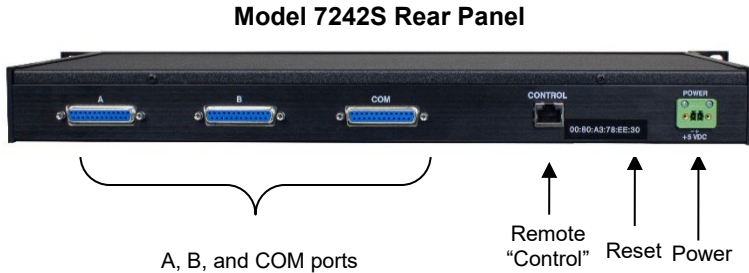


Figure 1: Model 7242S Rear Panel

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.
- **RESET** – Reset button for the 10Base-T LAN access Ethernet port.
- **REMOTE** – RJ45/F, 10BASE-T LAN access Ethernet Remote "CONTROL" port.
- **COM** – DB25 (F) connector, the "COMMON" or shared device port.
- **A** – DB25 (F) connector, the "A" device port.
- **B** – DB25 (F) connector, the "B" device port.

Power Supply

The Model 7242S is supplied via a wide range, 5VDC, 2A CE tabletop power supply, P/N 540359.

After the proper connections have been made, plug the 2-prong green connector at the end of the supply cable into the power socket located on the rear of the unit.

Next, plug one end of the appropriate country-specific power cord into the IEC 60320 C14 inlet of the supply and the other into a 100VAC-240VAC, 50Hz/60Hz receptacle.

Upon power up the Model 7242S will process its power up routine. When the routine is done the front panel LED's will indicate the present switch position. At this point the unit is ready for operation.

OPERATION

The Model 7242S can be operated either by the Front Panel or through its Remote port.

Model 7242S Front Panel



Pushbutton and LED's

Figure 2: Model 7242S Front Panel

Manual Control

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

- **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.
 - If the front panel pushbutton is locked and the button is pressed, both LED's will light until the pushbutton is released.
- **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.
 - Pushbutton control can be inhibited if locked out remotely.
- **STATUS Indicator** – The red LED "STATUS" indicates the status of the CONTROL port.
 - If the switch is connected to a Network, the red LED will be blinking.
- **LINK Indicator** – The green LED "LINK" indicates the status of the CONTROL port.
 - If the switch is connected to a Network, the LED will be on steady.

REMOTE ETHERNET CONNECTIONS

Verify the Hardware

Verify that the Model 7242S is currently powered. If the user needs to directly connect to the Model 7242S rather than through a LAN, a 10BASE-T crossover will be necessary (ESL can provide this – p/n 984228-006). This cable allows direct connection of the Model 7242S Remote LAN port to a computer with a network interface card (NIC).

If no LAN is available, use a Crossover Cable

If no LAN connection is available, the user can use a crossover cable. Plug one end of the cable into the RJ45 Remote port on the rear of the Model 7242S and the other end into the computer NIC as in Figure 3.

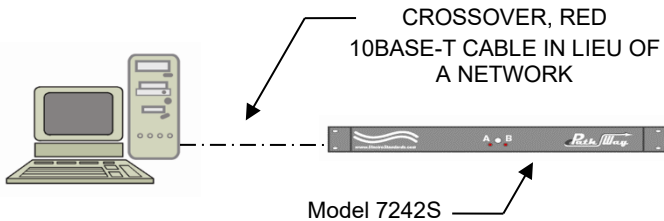
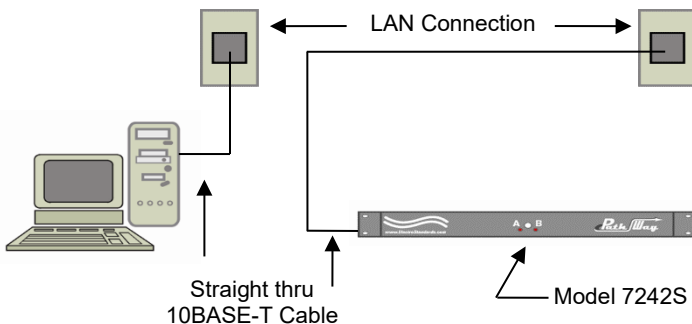


Figure 3: Crossover Cable connection for no LAN

If connecting to a LAN use 10Base-T Cable

Use a straight through 10BASE-T patch-cord from the Model 7242S LAN Remote port to a LAN connection, and likewise, reconnect the computer used to configure the system via a standard, straight through patch-cord to the LAN as in Figure 4. ESL can provide this cable (p/n



984231-006).

Figure 4: Connecting to a LAN with 10Base-T cable.

10BASE-T LAN SETUP

The Model 7242S A/B Switch System is configured with a default IP address. The unit must be configured for the LAN it will be connected to for Remote operation. The following steps will guide the user through the Remote access configuration:

Setup the Computer

Default network setting of the Model 7242S

IP address: 10.0.0.233

Netmask: 255.255.255.0

Gateway: 10.0.0.223

Nameserver: 64.65.196.6

Remote Ethernet Port Pinout

SIGNAL NAME	PIN #	DIRECTION
TRANSMIT DATA A (XMT-A)	1	OUTPUT
TRANSMIT DATA B (XMT-B)	2	OUTPUT
RECEIVE DATA A (RCV-A)	3	INPUT
RECEIVE DATA B (RCV-B)	6	INPUT

Table 1: Ethernet Remote Port Pinout

Resetting the Remote Ethernet Port

The Remote Ethernet port can be Reset to factory defaults. This is especially useful, in the event, that an invalid IP address configuration is set, and the unit becomes inaccessible through the Remote Ethernet port or if the Remote Configuration GUI username/password has been changed from the default and has been lost. To reset the IP address settings and the Remote Configuration GUI username/password only, the following steps must be performed:

- Power down the unit.
- While holding the front panel pushbutton, power up the unit. The pushbutton can be released once any of the LED's on the front panel light up.
- The unit will run through its reset routine. While this is occurring, both the LED's will be lit and will briefly flash off

periodically until it has finished. The entire process will take about 18 seconds.

- Once the reset routine is complete, the unit will be ready for operation without any further power cycling. Upon reset, the Remote Ethernet Port will acquire an IP address, and then be ready for use.

Once the IP address has been reset and the username/password restored to default, the unit will then be accessible.

REMOTE PORT CONNECTION & CONFIGURATION

To setup the 10-Base-T control port, the unit must be powered and connected to the network.

To Connect to Windows 10:

Go to "Control Panel: and select "Network and Sharing Center"

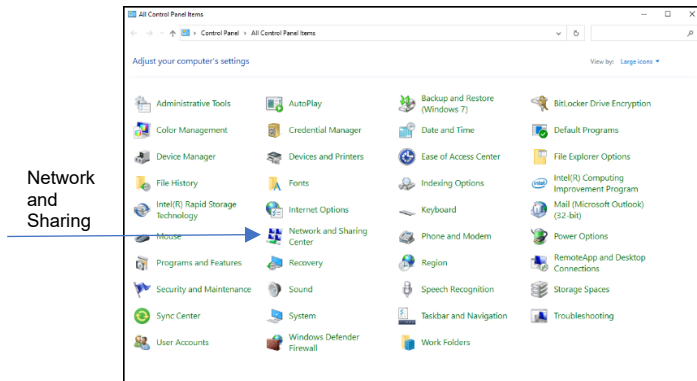


Figure 5: "Control Panel: and select "Network and Sharing Center".

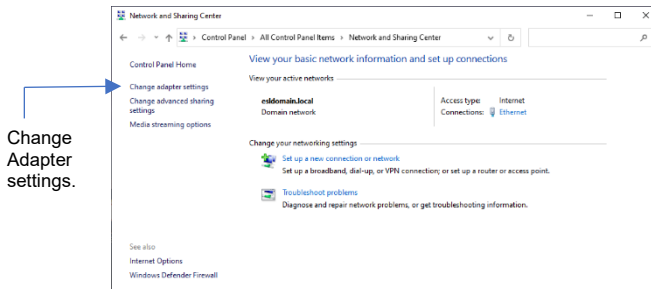


Figure 6: On the left side of "Control Panel", select the "Change Adapter settings" option.

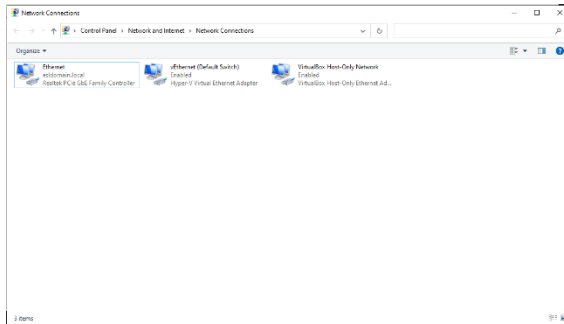


Figure 7: Select the Icon used for your NIC (Network Interface Card)

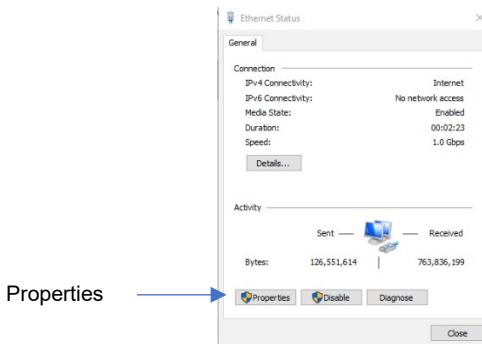


Figure 8: Highlight "Internet Protocol Version 4 (TCP/IPv4) and select Properties.

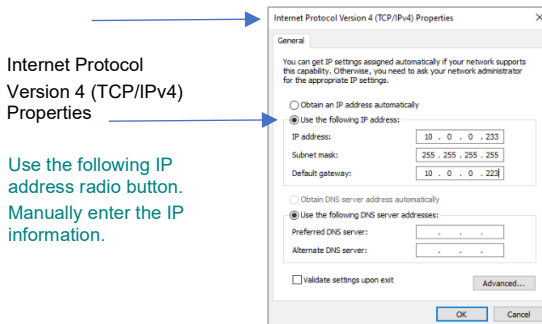


Figure 9: Click on the following "IP Address" radio button.

Then, manually enter the IP Information along with the subnet mask and default gateway. Press "Ok: when defaults have been set.

REMOTE OPERATION

Network Command Set

Enter Commands at the Command Prompt. There are two Command Prompts which correspond to the State of Authentication. Command Prompts are:

">" Not logged in

"!>" Logged in

Note: For important information regarding passwords and login sessions, see "Username/Password" section on page 14.

To login as the administrator, the username "ADMIN" must be used by default. The default password for the administrator is "111111". Logging in as the administrator will allow access to the 'netconf' and 'reboot' commands.

The commands in Table 2 are normal commands in the Telnet session, which require the user to press the ENTER key at the end of each command to be executed.

Model 7242S Remote Command Set

All switch commands start with a CONTROL code, either followed by nothing or as a 6-digit password. The factory default password is set to "111111". No enter key is needed at the end of the command. See Table 3.

Command	Parameter	Function	Response	Comment
CTRL-A, A, a	N/A	Switch to A	Position: A, Unlocked or Position: A, Locked	When logged in
CTRL-B, B, b	N/A	Switch to B	Position: B, Unlocked or Position: B, Locked	When logged in
CTRL-P, P, p	N/A	Query for current status	Depends on the present status, matches CTRL-A or CTRL B	When logged in
CTRL-L, L, l	N/A	Lockout pushbutton	Position: A, Locked or Position: B Locked	When logged in
CTRL-U, U, u	N/A	Unlock pushbutton	Position: A, Unlocked or Position: B, Unlocked	When logged in
CTRL-E, E, e	6-digit password	Login	Welcome or Invalid password	
CTRL-X, X, x	N/A	Logout & end session	Bye	When logged in
CTRL-N, N, n	6-digit password	New Password	Please re-enter password to confirm (CTRL M to continue)	When logged in
CTRL-M	6-digit password	Confirm new password	Password has been changed or Passwords don't match	When logged in
CTRL-S, S, s	N/A	Serial Number	Serial Number: <Serial>	When logged in
CTRL-V, V, v	N/A	Firmware Version	M7242S, Firmware Version X.X, Compiled <Date>	Works anytime

Table 2: Remote Control Commands

Error conditions not covered in Table 2:

- When the user inputs commands with passwords, the user has 2.5 seconds for each digit, otherwise a time out will occur, and the user must start over.

Any login session will time out in about 2 minutes if inactive. If the login session times out, the user will see the statement "SESSION TIMED OUT!" on the Telnet Session Screen.

Username / Password

The default password to login to the switch is “111111”. The password should be changed to something more secure as soon as the user first connects to the unit. Passwords must be 6 characters long.

Note: There are two separate passwords and two different login sessions for this device:

- The first login session is to protect the network setup
- The second login session is to protect the position of the switch from being changed without the authority to do so.

These are independent sessions. Even though both will initially use the same factory default password of “111111”, the user can change the password for each of these sessions to something different and the two passwords need not be the same.

Switch Position on Power Down

If power to the Model 7242S 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 a 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.
- If all LED's light up while the pushbutton is held, front panel operation is locked out and must be unlocked through the Remote.

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

- Check that the Remote Connection is still active. In Telnet Sessions, query the unit to see if a response is received.
- Consider disconnecting and attempting to reconnect to ensure that the Remote Connection is still accessible.

Remote Connection Issues

A Telnet Session with the unit cannot be opened.

- Check that the physical connections are correct. See section "Remote Ethernet Connections" on page 7 for more information.
- Check that the IP address settings have been configured properly. See section "10BASE-T LAN Setups" on page 8 for more information.
- Ensure that the Telnet port being used is correct. **Note:** The default port number is 10001.
- Check that no other users are currently connected to the switch remotely. If another Telnet Session is active, new connections will not be established. **Note:** The unit will refuse the connection, causing the connection failure message to appear typically much sooner than if the connection attempt timed out from being unable to locate the unit on the network.

The IP address configuration of the unit is invalid and needs to be reset.

- The unit's IP address and security settings can be restored to factory defaults by following the procedure in the "**Resetting the Remote Ethernet Port**" section on page 8.

Remote Login Issues

The unit will not stay logged in.

- For security purposes, Remote Sessions are logged out automatically after a period of 2 minutes without any input from the user.
- If this unit is being controlled by an automated system that needs to stay logged in to monitor the unit for changes or any other reason, the system will need to send something at least once every 2 minutes. This can be a query of some sort, or it can simply be any 'dummy' character that is not a recognized command and will yield an "Invalid Command" error that can be ignored. This heartbeat scheme using "keep alive" dummy characters is the recommended approach. Another option is to disable password protection.

The password is not being accepted.

- Check that the correct password is being typed.
- Note that passwords are case-sensitive.

The password has been lost/forgotten.

- If the password has never been changed, the default password should still be the valid password. By default, the password is '111111'.
- If the password has been changed from the Default and the New Password has been lost, the Password can be restored to the Default, through the use, of the CTRL-R command. Please contact Electro Standards Laboratories for further assistance.

SPECIFICATIONS

Size

Width: 19" [48.3 cm] (19" full rack size)

Height: 1.75" [4.5 cm] (1U)

Depth: 8.17" [20.8 cm]

Weight: 4.5 lbs. [2.1 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: 5VDC

DC Current: 360mA (peak), 72mA (nominal)

DC Power: 1.8W (peak), 0.36W (nominal)

Signal Port Ratings

Max Power: 60W

Max Voltage: 220VDC

Max Current: 2A

Signal Port Interfaces

(3) DB25 signal ports

Signal Port Channels

DB25 A/B/COM ports

Signal Port Pins Switched

DB25: Pins 1-25

Remote Port Interface

(1) RJ45 port (default IP Address: 10.0.0.233)

Front Panel Control and Indicators

(2) Red LED's

(1) Pushbutton

Power Supply 521895

Input: 100VAC-240VAC, 50/60Hz, 0.8A

Output: 5VDC (regulated), 4.0A

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.