

## FrameSaver™ SLV 9820 Standalone Unit Installation Instructions

Document Number 9820-A2-GN10-10

April 1999

---

### Product Documentation on the World Wide Web

We provide complete product documentation online. This lets you search the documentation for specific topics and print only what you need, reducing the waste of surplus printing. It also helps us maintain competitive prices for our products.

Complete documentation for this product is available at [www.paradyne.com](http://www.paradyne.com).  
Select *Library* → *Technical Manuals* → *FrameSaver Frame Relay Devices*.

Select the following document:

9820-A2-GB20  
*FrameSaver SLV 9820 User's Guide*

To request a paper copy of a Paradyne document:

- Within the U.S.A., call 1-800-PARADYNE (1-800-727-2396)
- Outside the U.S.A., call 1-727-530-8623

### FrameSaver SLV 9820 Models

There are two models of the FrameSaver 9820 product:

- **Model 9820-C** – Central site model. Supports up to 120 PVCs.
- **Model 9820** – Remote site model. Supports up to 8 PVCs.

---

## Before You Begin

If you ordered a wall mounting kit (Feature No. 9001-F1-891) for your FrameSaver access unit, install the wall mounting before you start installing the unit. Follow the same guidelines below when installing the wall mounting. Contact your sales representative to order this feature.

Before starting the installation, make sure you have:

- A dedicated, grounded power outlet that is protected by a circuit breaker within 6 feet of the FrameSaver unit.
- A clean, well-lit, and ventilated site that is free from environmental extremes.
- One to two feet of clearance for cable connections.
- A physical connection to the frame relay network via an NTU, with either an EIA-530, V.35 or an X.21 user interface. This connection is made using the appropriate cable attached to the Network port of the FrameSaver unit.  
This cable is not supplied with your FrameSaver unit, and you will need to order the appropriate cable kit for your application, V.35, X.21, or EIA-530 (see page 3 for the Feature No. you need to order).
- An async (asynchronous) terminal or PC (personal computer) to set up the access unit.
- Node IP Addresses and Subnet Masks (see your network administrator).

## Package Checklist

Verify that your package contains the following:

- FrameSaver SLV 9820 or 9820-C unit
- Universal power supply with an attached cable and ferrite choke
- Power cord appropriate for the wall-plug standard in your country (depends on model ordered).
- COM port-to-PC cable – DB9 connector (14 feet – 4.3m)
- FrameSaver SLV 9820 Quick Reference* (Document No. 9820-A2-GL10)

Additional cables may be ordered. See *Cables You Can Order* on page 3 when ordering cables.

## Cables You Can Order

If connecting to . . .	Order a . . .	Feature Number	Part Number
A terminal (EIA-232 interface, DB25 connector)	COM Port-to-terminal cable (14 feet – 4.3 meters)	3100-F2-540	035-0314-1431
LAN adapter	COM Port-to-LAN adapter cable (14 feet – 4.3 meters)	3100-F2-910	035-0315-1431
Equipment with X.21 interfaces, DB15 connectors	X.21 cable kit, which includes a: <ul style="list-style-type: none"> <li>■ X.21 network cable (10 feet – 3 meters)</li> <li>■ X.21 DTE adapter cable, EIA-530A-to-X.21 (1 foot – .3 meters)</li> </ul>	9008-F1-521	<ul style="list-style-type: none"> <li>■ 035-0384-1031</li> <li>■ 035-0302-0131</li> </ul>
Equipment with V.35 interfaces, MS34 connectors	V.35 cable kit, which includes a: <ul style="list-style-type: none"> <li>■ V.35 network cable (10 feet – 3 meters)</li> <li>■ V.35 DTE adapter, EIA-530A-to-V.35</li> </ul>	9008-F1-522	<ul style="list-style-type: none"> <li>■ 035-0383-1031</li> <li>■ 002-0095-0031</li> </ul>
Equipment with EIA-530 interfaces, DB25 connectors	EIA-530 straight-through cable (10 feet – 3 meters)	9008-F1-523	035-0385-1031

Contact your sales representative to order cables.

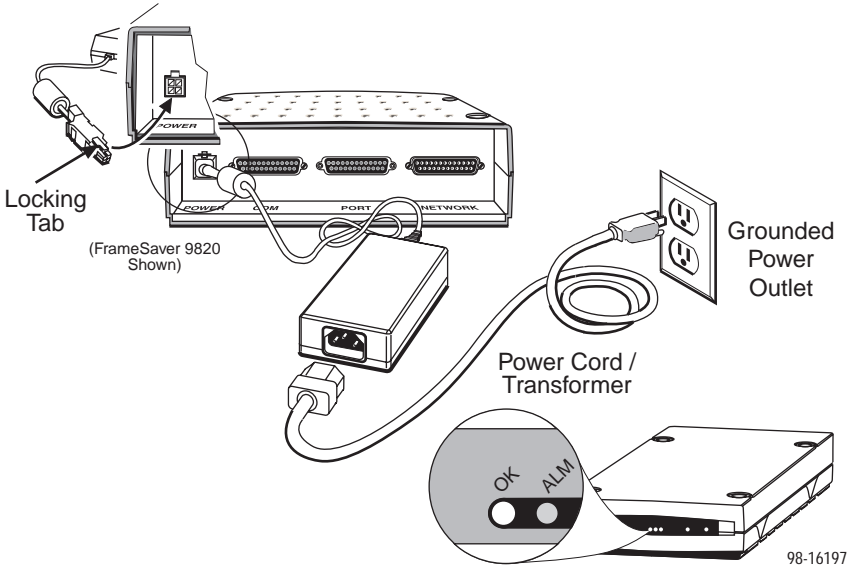
## Safety Instructions

Please refer to the *Important Safety Instructions* beginning on page 25.

# Installing the Power Supply and Cord

1. Insert the power supply's 4-prong plug into the POWER jack.

When inserting the plug at the rear of the FrameSaver unit, align the plug with the notch above the POWER jack. Make sure the locking tab snaps securely into the jack.



2. Insert the socket end of the power cord into the power supply's receptacle.
3. Plug the power cord into the grounded power outlet.

## Verification Check

Did the OK LED light?

- If yes, the FrameSaver unit has power and has passed self-test.
- If no, refer to *Troubleshooting Power Connections* on page 6.

## NOTE:

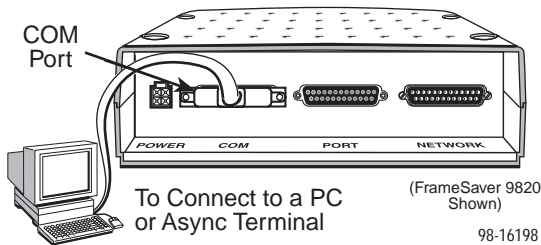
It is normal for the Operational alarm (ALM) LED on the front panel to be lit at this point in the installation.

---

## Connecting the COM Port to an Async Terminal or PC

The FrameSaver unit must first be directly connected to a PC or async terminal (providing VT100 terminal emulation) to set up access and management of the unit.

1. Configure the VT100-compatible terminal or PC to be compatible with the access unit:
  - Baud Rate set to 19.2 kbps
  - Character length set to 8 data bits
  - Parity set to none
  - Stop bit set to 1
  - Flow Control set to None
2. Insert the DB25 end of the EIA-232 cable into the FrameSaver unit's COM port.



3. Insert the other end of the cable into the PC or VT100-compatible terminal.
4. Tighten the screws on each side of the connector to secure them.
5. Press Enter (or Return, depending on your keyboard) to display the Main Menu.

### Verification Check

Did the Main Menu appear?

- If yes, you are ready to continue with the installation.
- If no,
  - Recheck terminal and FrameSaver unit compatibility (see settings in Step 1).
  - Did you press the Enter key on your keyboard?

Refer to *Troubleshooting Power Connections* on page 6 for other possible causes. Refer to *Troubleshooting* in the User's Guide for additional explanations.

## Verifying that Self-Test Passed

1. Follow this menu selection sequence from the Main Menu and press Enter after each selection:

*Main Menu → Status → System and Test Status*

2. Check the Self-Test Results column (in the center of the System and Test Status screen).
  - If **Passed** appears, the FrameSaver unit successfully completed the self-test.
  - If any failure messages appear in this column, reset the unit by disconnecting, then reconnecting the power cord. The unit will perform the self-test again. If the failure reappears, call your service representative for assistance.

## Troubleshooting Power Connections

Symptom	Possible Cause	Solutions
None of the system LEDs are lit.	Power cord is not securely plugged into the wall power outlet or the universal power supply.	Check that the power cord is securely attached at both ends.
	Wall receptacle has no power.	1. Check the wall receptacle power by plugging in some equipment that is known to be working. 2. Check the circuit breaker.
	Power supply is defective.	Contact your sales or service representative for replacement of the power supply.
An LED is not lit.	LED is burned out.	Run the Lamp Test. If the LED in question does not flash with the other LEDs, contact your sales or service representative.
Power-Up Self-Test fails. The Alarm LED is on after power-up, but the OK LED is not.	The FrameSaver unit has detected an internal hardware failure.	1. Reset the FrameSaver unit and try again. 2. Contact your service representative.

---

# A Quick Guide to Configuration

The FrameSaver unit should operate using the default (factory-set) configuration options, with exception to the changes specified in these installation instructions. Refer to the following table for help navigating the menus.

Press the . . .	To . . .
Esc key	Go back one screen or menu level. To see a visual representation of the menu levels, see <i>Menu Hierarchy</i> in the <i>FrameSaver 9820 Quick Reference</i> .
Tab key, or Up (↑), Down (↓), Left (←) and Right (→) arrow keys	Move the cursor from one menu item to the next. Tab from field-to-field rather than pressing the Return key to avoid clearing information just entered, or inadvertently changing default option settings. Like Enter, the Tab key advances the cursor to the next field.
Enter or Return key	Complete the menu or option selection.
Spacebar	Display the next available setting when changing a configuration option. All the available settings for an option appears at the bottom of the screen.

As an example, follow these steps to go to the Configuration Edit/Display menu so you can start setting up the unit:

1. From the Main Menu, press the down arrow key twice so the cursor is on Configuration.
2. Press Enter to display the Configuration menu. The Load Configuration From menu appears.
3. Press Enter to select Current Configuration, where the cursor is already positioned. The Configuration Edit/Display menu appears.

This sequence of steps would be shown as the menu selection sequence:

*Main Menu → Configuration → Load Configuration From: → Current Configuration*

To save a configuration option change:

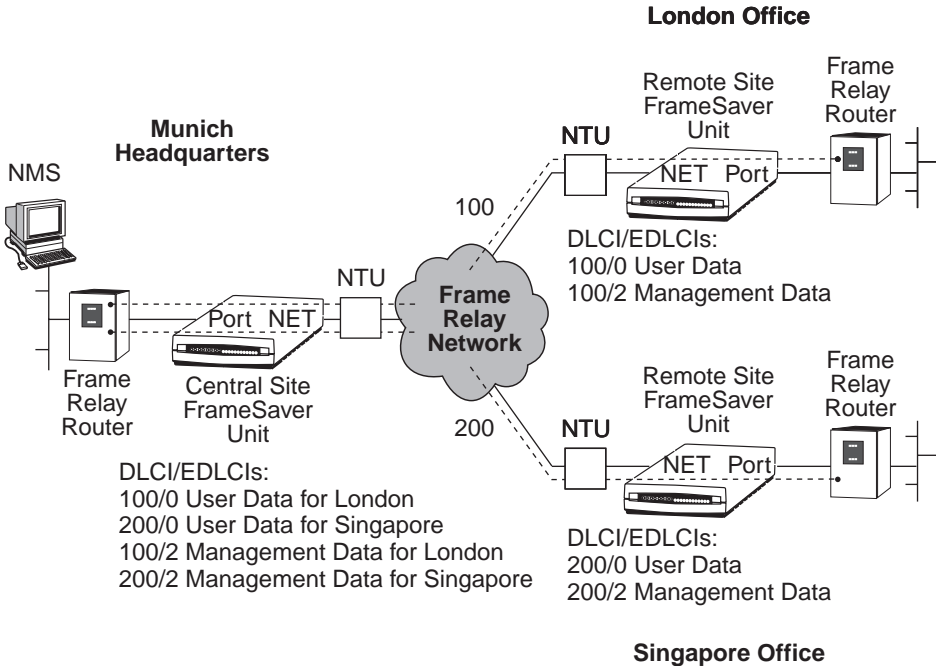
1. Press Ctrl-a to switch to the screen function keys area at the bottom of the screen.
2. Type **s** or **S** (Save) and press Enter. The Save Configuration To menu appears.
3. Press Enter again to save your changes to the Current Configuration.

In the sections that follow, only the minimum option changes required are included so you will have a quick and trouble-free installation.

See the configuration option tables in the User's Guide for more information about configuration options.

# Installing and Setting Up the 9820 FrameSaver Unit

The following sections guide you through installation and setup of the FrameSaver unit. It is assumed that the FrameSaver unit being configured is a remote unit located at a company's branch office (e.g., London) and that the central site unit is located at the company's headquarters (e.g., Munich). See the following figure for an example.



It is assumed that the unit is configured for factory default settings at the start of installation.

The configuration option settings for management, as described in this document, are appropriate for the remote site unit. The central site FrameSaver unit should be configured for management from a Network Management System (NMS), through either the attached router as shown in the above figure, or through the Network Operations Center (NOC) router (for management by the Network Service Provider). Multiple management PVCs then connect the central site unit to the remote site units. It is assumed that the central site FrameSaver unit is installed and configured using the Auto-Configuration feature. See the User's Guide for more information on configuring the central site unit.

---

To complete the installation, you must:

- Configure the FrameSaver unit.
- Connect to the network.
- Configure SNMP Trap Managers.
- Set up service provider connectivity.
- Connect to the DTE.

**NOTE:**

Follow these instructions as they are presented. Installation time will be increased if you connect all cables first.

## Configuring the FrameSaver Unit

To configure the FrameSaver unit:

- Set up the system clock.
- Configure physical interfaces.
- Set up for management.
- Verify the settings for Auto-Configuration.

## Setting the System Clock

To set up the system clock:

1. Select Date & Time.

*Main Menu → Control → Date & Time*

2. Move the cursor to the first field and enter the:
  - Date in mm/dd/yyyy format (month/day/year).
  - Time in hh:mm format (hours:minutes).
3. Press Ctrl-a and Save the date and time.
4. Return to the Main Menu.

**Helpful Hint:**

You can press Ctrl-a, type **m** and press Enter to return to the Main Menu, or you can press the Esc key until the Main Menu appears.

---

## Configuring Physical Interfaces

The network and data port interfaces support three different port types: EIA-530, V.35 and X.21. If your application does not use EIA-530 interfaces, then the port type needs to be changed. The port type is specified in the physical configuration options.

To configure the physical interfaces:

1. Select the Network physical configuration options.

*Main Menu → Configuration → Network → Physical*

2. Select the appropriate Port Type.
3. Press Ctrl-a and Save your change(s).
4. Return to the Configuration Edit/Display menu.
5. Repeat Steps 2–4 for the data port.

*Main Menu → Configuration → Data Ports → Physical*

6. Return to the Configuration Edit/Display menu.

See *Configuring the Network Data Port Physical Options* and *Configuring the User Data Port Physical Options* in *Configuration Options* of the User's Guide to read about the physical options for these interfaces.

---

## Setting Up Management

See *Configuring Node IP Information* and *Configuring SNMP Management* in *Configuration Options* of the User's Guide to read about the configuration options identified in the following procedure.

To set up SNMP management:

1. Select Node IP configuration options.

*Configuration → Management and Communication → Node IP*

2. Minimally, enter the following options:
  - Node IP Address
  - Node Subnet Mask
3. Return to the Management and Communication menu.
4. Select General SNMP Management.
5. Minimally, set Name 1 Access to Read/Write.
6. Press Ctrl-a and Save your change(s).
7. Return to the Main Menu.

---

## Auto-Configuration

The default frame relay discovery mode is 1MPort. If you do not want management links configured or auto-configuration, change the default setting for FR Discovery. The following table describes the difference between the various settings.

FR Discovery Mode	Description
1MPort <i>(Default)</i>	Auto-configuration is enabled, and for each DLCI discovered on the network, a multiplexed network DLCI and a standard port DLCI will be configured and connected. The multiplexed network DLCI will contain one EDLCI for management traffic, and one EDLCI for customer data. The customer data EDLCI on the network will be cross-connected to the data port DLCI.
1Port	Auto-configuration is enabled. For each DLCI discovered on the network, a multiplexed network DLCI and a standard port DLCI will be configured and connected, creating a PVC within the FrameSaver unit. No management DLCIs will be configured on the network interface.
NetOnly	Auto-configuration is enabled, DLCIs are discovered on the network interface, but no cross-connections are configured.
Disable	No frame relay discovery takes place. No DLCIs will be configured on the network interface. The user must manually configure the FrameSaver unit.

To change the default setting for FR Discovery:

1. Select Auto-Configuration.  
*Main Menu → Auto-Configuration*
2. Select another frame relay discovery mode (FR Discovery).
3. Press Ctrl-a and Save your change. The **Delete All DLCIs and PVC Connections?** prompt appears.
4. Type **y** (Yes) and press Enter.
5. Return to the Main Menu.

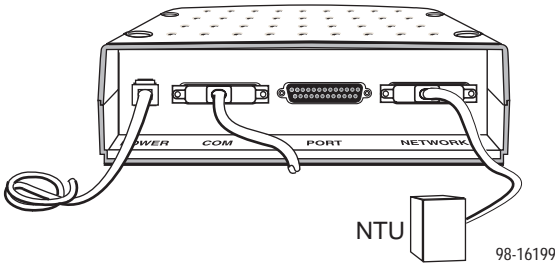
See *Using Auto-Configuration, Typical Applications, Setting Up Automatic Configuration*, and *Setup* in the User's Guide for additional information.

---

## Connecting to the Network

Now that the FrameSaver unit is set up, the unit can be connected to the network.

1. Insert the DB25 connector of the network cable into the network data port.
2. Insert the other end of the cable into the NTU (EIA-530, V.35 or X.21).



### NOTE:

After connecting the network cable, wait about a minute to allow Auto-Configuration a chance to discover DLCIs.

### Verification Check:

1. Is the Network (NET OK) LED on?
  - If yes, the network interface is set up correctly and is operational.
  - If no, check that both ends of the network cable are properly seated.
2. Select System and Test Status.

*Main Menu → Status → System and Test Status*
3. Check Health and Status messages in the left column of the System and Test Status screen to see the LMI status, to verify that LMI is up.
  - If **LMI Down**, **Net1-FR1** appears for more than three minutes, or any other network-related status message appears, refer to the status information in *Displaying System Information* of the User's Guide.

---

# Configuring SNMP Trap Managers

Once the FrameSaver unit is connected to the network, SNMP Trap Managers can be configured.

To enter SNMP managers:

1. Select SNMP Traps configuration options.

*Main Menu → Configuration → Management and Communication →  
SNMP Traps*

2. Minimally, enter at least one trap manager – the central site's NMS trap manager:
  - SNMP Traps set to Enable
  - Number of Trap Managers (at least one)
  - NMS *n* IP Address (*n* being the first, second, third, etc., trap manager entered)
  - Destination for Trap (usually the Management PVC)
3. Press Ctrl-a and Save your changes to Current Configuration.
4. Return to the Main Menu.

---

## Setting Up Service Provider Connectivity at the Central Site

If management needs to be set up between a service provider's customer and its network operations center (NOC), a non-multiplexed DLCI must be configured to carry management data between the customer's central site and the NOC console. This requires that a frame relay discovered DLCI needs to be modified in the central site unit. This is because all frame relay discovered network DLCIs are configured as multiplexed.

At the central site FrameSaver unit:

1. Select DLCI Records on the network interface.

*Configuration → Network → DLCI Records*

2. Type **o** (Modify) and press Enter. The **Modify DLCI Record for DLCI Number?** prompt appears.

3. Select the DLCI that will be used by pressing the spacebar until the correct DLCI number appears, then press Enter.

4. With the cursor on the DLCI Type field, press the spacebar to change the DLCI Type from Multiplexed to Standard.

The **Delete EDLCI Connections and Make it a Mgmt Only PVC?** prompt appears.

5. Type **y** (Yes) and press Enter.

PVC connections for the selected DLCI are broken, the Port-1 DLCI mapped to this network DLCI and the embedded management DLCI (EDLCI) are deleted, and the selected DLCI will be reconfigured as a management PVC.

---

## Verifying the End-to-End Path

After installation of a remote site unit, run an IP Ping test to ping the NMS at the central site or at the NOC and verify that the entire path from the remote unit to the NMS is functioning. To run the IP Ping test, NMS trap managers must have been configured for the remote unit. One of those trap managers must be the central site or NOC NMS.

If trap managers were not configured, proceed to *Troubleshooting the Network Connection* on page 17 and run a Connectivity test.

1. Select the IP Ping test.

*Main Menu → Test → IP Ping*

2. Enter the IP Address of the device (e.g., NMS station) being pinged, then select Start.

### **NOTE:**

When running tests, the cursor is positioned over the Start command. Press Enter to start the test. Stop is displayed while the test is running. Press Enter again to issue the Stop command.

- While the test is running, **In Progress . . .** is displayed in the Status field.
- When the test is finished, **Alive. Latency = nnms** should appear as the Status (*nn* being the amount of time the test took in milliseconds).  
If any other message is displayed, additional testing will be required.

See *Device Messages* in *Displaying System Information* of the User's Guide for information about IP Ping-related messages.

---

## Troubleshooting the Network Connection

1. Check the Network LMI Reported DLCIs screen to verify that the DLCI status is active.

*Main Menu → Status → LMI Reported DLCIs*

2. Run a Connectivity test to see if the unit at the other end of the multiplexed PVC is active.

*Main Menu → Test → Network PVC Tests*

- If **RndTrip Time (ms)** appears, along with the number of milliseconds it took to receive a response, the unit at the remote end is connected and operational. Go to Step 3.
- If a response is not received within 5 seconds and **No Response** is reported, refer to *Frame Relay PVC Problems* in *Troubleshooting* of the User's Guide.

3. Put the central site FrameSaver unit into PVC Loopback, taking frames from the PVC and looping them back.

At the central site unit:

*Main Menu → Test → Network PVC Tests → PVC Loopback*

4. On the remote site unit, send a pattern over the network interface and monitor it.

*Main Menu → Test → Network PVC Tests →*

*Send Pattern → Start*

*Monitor Pattern → Start*

- If there are few or no errors, the unit at the remote end is connected and operational.
- If 5 packets out of 25 are missing or out of sequence, an **Out of Sync** message is reported. Refer to *Frame Relay PVC Problems* in *Troubleshooting* of the User's Guide for additional information.

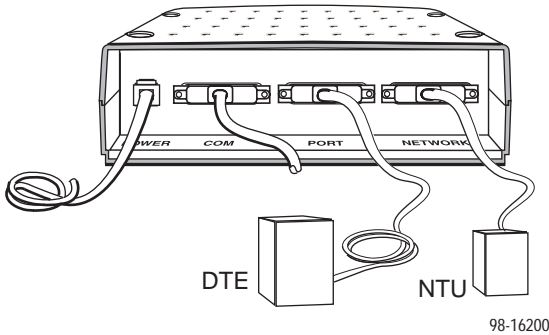
5. Stop tests on both the central site and remote units.

See *Displaying System Information* in the User's Guide for additional message information, and *Troubleshooting* for additional troubleshooting information.

---

## Connecting to the DTE (Router or FRAD)

1. Connect the appropriate cable to the Port connector.
  - If the DTE interface type is EIA-530A, the DTE can be directly connected to the Port connector.
  - If the DTE interface type is V.35 or X.21, a V.35 or X.21 adapter cable is required.
2. Plug the other end of the cable into the DTE.
3. Tighten the screws on each side of the connector to secure them.



### Verification Check:

1. Is the Port OK LED on?
  - If yes, the port is set up correctly and is operational.
  - If no, check that both ends of the cable are properly seated and secured.
2. Check Health and Status messages in the left column of the System and Test Status screen for messages.

*Main Menu → Status → System and Test Status*

- If **system Operational** appears, the Port interface is set up correctly and is operational.
- If **system Operational** does not appear, refer to the status information in *Displaying System Information* of the User's Guide.

### NOTE:

When any error conditions are detected, a status message appears along the bottom right corner of the screen.

---

## Check that Data is Being Received

1. Return to the Main Menu.
2. Select Performance Statistics, and select an interface's frame relay statistics (e.g., Network Frame Relay).

*Main Menu → Status → Performance Statistics → Network Frame Relay*

### **Helpful Hint:**

You can save keystrokes by using the up (↑) and down (↓) keys to scroll up and down through menu selections on the screen, from first-to-last menu selections, or last-to-first.

3. Verify that the Frames Received and Characters Received counts under the Frame Relay Link statistics are incrementing, and there are no errors under the Frame Relay LMI statistics.
  - If count increments occur after refreshing the screen, the unit is receiving data.
  - If data is not being received, recheck the cable connections, and replace or repair a damaged cable. Recheck LMI status; you may need to contact your service provider. Next, check the DLCI's status.

### **Helpful Hint:**

Press Ctrl-a, type r for Refresh, and press Enter to update the counts that are displayed.

See *Displaying System Information* in the User's Guide for additional status information, and *Troubleshooting* for additional troubleshooting information.

---

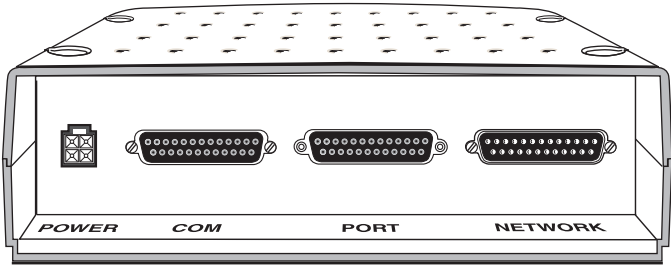
## Check PVC Connections

Check PVC connections to verify that all PVCs, including management PVCs, are configured, and to see whether the PVC is active or not.

1. Return to the Status menu.
2. Select PVC Connection Status.  
The PVC Connection Status screen shows all PVC connections; the interface source and DLCI number of the incoming data linked to the interface and DLCI number for the outgoing data. You can also see whether the PVC is active.
3. Verify that the management PVC that you configured appears on the screen and is linked to an outgoing DLCI. Instead of an interface as the source link, Mgmt PVC is shown; and instead of a DLCI number, the name given the PVC is shown.
  - If the management PVC appears and is linked, it carries management data.
  - If it does not appear, recheck your configuration.
4. Verify that each PVC is active.
  - If active, the FrameSaver unit should be passing data.
  - If not active, no data traffic can be carried by the PVC. If the PVC is configured correctly, the circuit may be down.

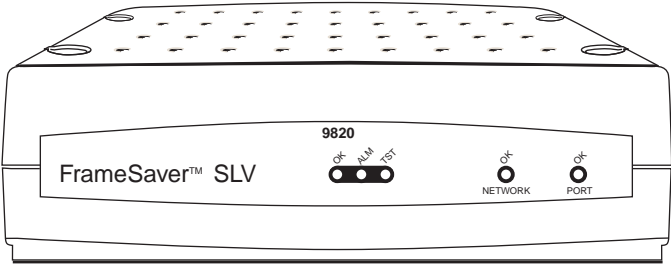
See *Displaying System Information* in the User's Guide for additional status information, and *Troubleshooting* for additional troubleshooting information.

# FrameSaver 9820 Rear Panel



98-16189

# FrameSaver 9820 Front Panel



98-16201

# Technical Specifications

Specification	Criteria
<b>Weight</b>	2.59 lbs. ( 1.18 kg)
<b>Power</b> Input Output	100 – 240 Vac, 50/60 Hz, 0.7A 12 Vdc, 2.5A, 1.0A minimum
<b>Power Consumption and Dissipation</b>	4.8 watts, 100 mA at 100 Vac Result: 16.38 Btu per hour 5.0 watts, 90 mA at 120 Vac Result: 17.06 Btu per hour 5.6 watts, 60 mA at 240 Vac Result: 19.11 Btu per hour
<b>Physical Environment</b> Operating temperature Storage temperature Relative humidity Shock and vibration	35°F to 122°F ( 1.7°C to 50°C) –4°F to 158°F (–20°C to 70°C) 5% to 85% (noncondensing) Withstands normal shipping and handling
<b>COM Port/Interface –</b> Communications/Management Data rates	DB25 connector 9.6, 14.4, 19.2, 28.8, 38.4, 57.6, and 115.2 kbps
<b>Port Interface –</b> Synchronous Frame Relay Data Port Data rates	25-position (DB25) subminiature connector Selectable EIA-530, V.35, X.21 Automatically set to same values as the Network interface
<b>Network Interface –</b> Synchronous Frame Relay Data Port Data rates	25-position (DB25) subminiature connector Selectable EIA-530, V.35, X.21 Model 9820: 64 kbps and 128 kbps (auto-detected or user-configured) Model 9820-C: 64–2048 kbps in 64 kbps increments (auto-detected or user-configured)

---

## Pin Assignments

In the tables that follow, if the pin number is not shown, it is not being used.

### COM Port/Interface

Signal	Direction	Pin #
Shield	–	1
Transmit Data (TXD)	To COM port (In)	2
Received Data (RXD)	From COM port (Out)	3
Request to Send (RTS)	To COM port (In)	4
Carrier Detect (CD)	From COM port (Out)	5, 6, 8
Signal Ground (SG)	To/From COM port	7
Data Terminal Ready (DTR)	To COM port (In)	20

## EIA-530A DTE/DCE Ports/Interfaces

Signal	Circuit Mnemonic	ITU/ CCITT #	Direction	25-Pin Pin #
Shield	—	—	—	1
Transmitted Data (TXD)	BA	103	To DCE	2 (A) 14 (B)
Received Data (RXD)	BB	104	From DCE	3 (A) 16 (B)
Request to Send (RTS)	CA	105	To DCE	4 (A) 19 (B)
Clear to Send (CTS)	CB	106	From DCE	5 (A) 13 (B)
Data Set (or DCE) Ready (DSR)	CC	107	From DCE	6
Signal Ground/Common (SG)	AB	102A	To/From DCE	7
Received Line Signal Detector (RLSD or LSD)	CF	109	From DCE	8 (A) 10 (B)
Transmit Signal Element Timing (TXC – DTE Source)	DA	113	To DCE	11 (B) 24 (A)
Transmitter Signal Element Timing (TXC – DCE Source)	DB	114	From DCE	12 (B) 15 (A)
Receiver Signal Element Timing (RXC – DCE Source)	DD	115	From DCE	17 (A) 9 (B)
Local Loopback (LL)	LL	141	To DCE	18
Data Terminal (or DTE) Ready (DTR)	CD	108/1, /2	To DCE	20
Test Mode Indicator (TM)	TM	142	From DCE	25

### NOTES:

The User data port has a DCE personality, while the Network data port has a DTE personality.

Refer to the User's Guide for X.21 and V.35 cable pinouts.

---

## Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. All installation and service must be performed by qualified service personnel, as opening or removing covers may expose you to dangerous high voltage points or other risks.
3. The power supply to be used with this product is intended to be used with a 3-wire grounding type plug – a plug which has a grounding pin. This is a safety feature. Equipment grounding is vital to ensure safe operation. Do not defeat the purpose of the grounding type plug by modifying the plug or using an adapter.  

Prior to installation, use an outlet tester or a voltmeter to check the ac receptacle for the presence of earth ground. If the receptacle is not properly grounded, the installation must not continue until a qualified electrician has corrected the problem.

If a 3-wire grounding type power source is not available, consult a qualified electrician to determine another method of grounding the equipment.
4. Input power to this product must be provided by a power supply with a Safety Extra Low Voltage (SELV) output less than 240 VA available, certified for use in the country of installation.  

Paradyne power supply part number 327-0107-0031 is recommended. This power supply includes a special mating connector for connection to this equipment.
5. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
6. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
7. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer.
8. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
9. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnected**, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.

- 
- 10.** In addition, if the equipment is to be used with telecommunications circuits, take the following precautions:
- Never install telephone wiring during a lightning storm.
  - Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
  - Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
  - Use caution when installing or modifying telephone lines.
  - Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
  - Do not use the telephone to report a gas leak in the vicinity of the leak.

## **EMI Warnings**

### **WARNING:**

**This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at his own expense.**

**The authority to operate this equipment is conditioned by the requirements that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne.**

### **WARNING:**

**To Users of Digital Apparatus in Canada:**

**This Class A digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.**

**Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matériel brouilleur du Canada.**

---

## CE Marking

When the product is marked with the CE mark, this demonstrates full compliance with the following European Directives:

- **Directive 73/23/EEC** – Council Directive of 19 February 1973 on the harmonization of the laws of the member states relating to electrical equipment designed for use within certain voltage limits, as amended by Directive 93/68/EEC.
- **Directive 89/336/EEC** – Council Directive of 3 May 1989 on the approximation of the laws of the member states relating to Electro-Magnetic Compatibility (EMC), as amended by Directive 93/68/EEC.
- **Directive 91/263/EEC** – Council Directive of 29 April 1991 on the approximation of the laws of the member states concerning telecommunication terminal equipment, including mutual recognition of their conformity, as amended by Directive 93/68/EEC. The application of this directive is in relation only to X.21 and V.35 network interfaces as specified in CTR 1 and CTR 2.

## Japan

Class A ITE

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

### CAUTION Translation:

**This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.**

---

## Warranty, Sales, Service, and Training Information

Contact your local sales representative, service representative, or distributor directly for any help needed. For additional information concerning warranty, sales, service, repair, installation, documentation, training, distributor locations, or Paradyne worldwide office locations, use one of the following methods:

- **Internet:** Visit the Paradyne World Wide Web site at **www.paradyne.com**. (Be sure to register your warranty there. Select *Service & Support* → *Warranty Registration*.)
- **Telephone:** Call our automated system to receive current information by fax or to speak with a company representative.
  - Within the U.S.A., call 1-800-870-2221
  - Outside the U.S.A., call 1-727-530-2340

## Document Feedback

We welcome your comments and suggestions about this document. Please mail them to Technical Publications, Paradyne Corporation, 8545 126th Ave. N., Largo, FL 33773, or send e-mail to **userdoc@paradyne.com**. Include the number and title of this document in your correspondence. Please include your name and phone number if you are willing to provide additional clarification.

## Trademarks

All products and services mentioned herein are the trademarks, service marks, registered trademarks or registered service marks of their respective owners.



\*9820-A2-GN10-10\*