4 Position Menu Activated Switch
Model 4P-MAS

INTRODUCTION

The 4 Position Code Activated Switch, **Model 4P-MAS** allows one master RS-232 port to be selectively switched to any of four RS-232 devices, designated A through D. Typically, the 4P-MAS is used to allow one modem to access the configuration or out-of-band management ports of four remote devices (see Figure 1A). Three modes of operation allow the selection of the port to be connected.

Menu Selection

The 4P-MAS selects the port to connect to the master based on menu selections. The menu system allows convenient naming of each port, and setup of all 4P-MAS parameters.

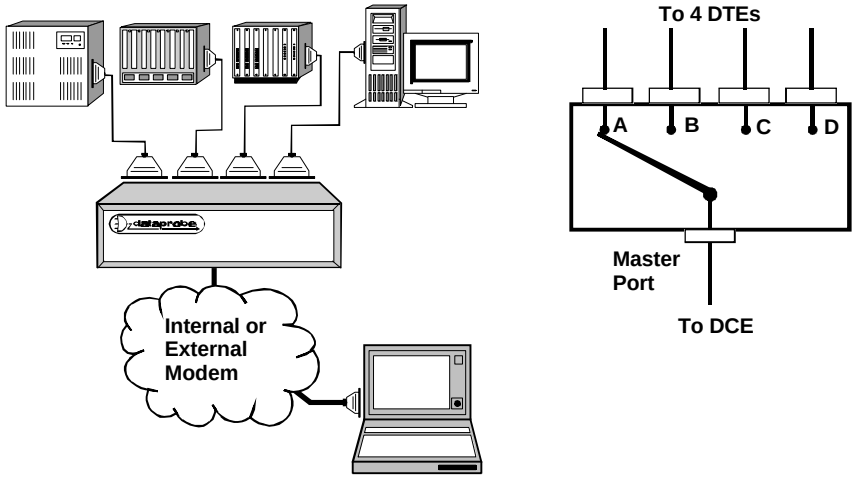
Lead Control

This option allows any of the four ports can access the master port by raising its Request To Send (RTS) or Data Terminal Ready (DTR) control lead. This capability is in addition to the menu selection as described above.

Manual Control

A front panel push-button allows local control of port selection.

There are four LED's on the front of the 4P-MAS to indicate which port is connected to the master. There are four DB25S female connectors on the rear panel for the switched ports, (designated A-D) and one DB25P male connector for the Master Port. The 4P-MAS also supports an internal modem option. Dataprobe supplies modems from 2400 bps to 33.6 Kbps. This modem can be factory or field installed. Figure 1 illustrates a typical system using the 4P-MAS.



REF: CAS\4P-MAS_V980326R.DOC

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OPERATION

The 4P-MAS is controlled principally through an ASCII terminal interface. Access to this configuration menu can be achieved either by: connecting via modem connected to the Master Port, or directly via terminal (using a null cable) into the Master Port of the 4P-MAS. See page 6 for installation details.

The default parameters are: 9600 bps 8 data 1 stop no parity.

All of these parameters can be changed through the programming menu.

Auto Rate Detect: The 4P-MAS automatically determines the speed of the connection. If the Login Prompt does not appear, press the Enter Key several times to enable the Auto Rate Detect.

Once connected to the 4P-MAS, the system sends a login prompt.

```
LOGIN >
```

Enter the Security Code. **The Factory Default Security Code is: TEST** . Please change this code as soon as possible. Remember your code. When connecting through a modem, three incorrect attempts to enter the security code will cause the 4P-MAS to terminate the call. When the correct code is entered, the Main Menu appears:

```
A) PORT A
B) PORT B
C)  PORT C
D)  PORT D

1) LOCAL CONFIGURATION
X) EXIT

ENTER PORT >
```

This allows selection of any port, Local Configuration to access the programming menu or terminate the current session. When Exit is selected, the 4P-MAS logs the user out and a new Login is required.

To select a port, enter the letter desired, followed by the Enter Key. Once a port is selected, the 4P-MAS will clear the screen and generate the following message:

```
PORT A SELECTED
ENTER ESC{PASSWORD}ESC TO RETURN TO MENU
```

At this point the Master Port is connected through to the port selected. The 4P-MAS is passive to the messages sent between the Master Port and the port selected. To terminate the session with the current port and bring back the menu, enter the escape character plus the security code and another escape character. i.e. $^{E}s_{C}$**TEST**$^{E}s_{C}$

LOCAL CONFIGURATION

A configuration menu is used to set most operational features of the 4P-MAS.

```
1)  DEVICE LABELS
2)  PASSWORD
3)  BAUD: 9600
4)  PARITY/DATA: N,8
5)   LEAD CTL: N
6)   MODE: MODEM
7)   TIMEOUT: 0
X)   EXIT

ENTER  >
```

Device Labels

This allows changing of the screen labels for the ports.

```
A) PORT A
B) PORT B
C) PORT C
D) PORT D

X)  EXIT

ENTER LABEL # (A-D) >
```

Enter the label to be changed. The current label is displayed along with a prompt for the new name. Type in a new label and then confirm the selection as shown below. Labels can be up to 32 characters.

```
CURRENT LABEL PORT A PORT A
NEW LABEL PORT A > Your New Name

PORT LABEL  CHANGED FROM: PORT A
                    TO: Your New Name
SAVE CHANGES? (Y/N) >
```

Password

To change the password, it must be reentered. Then a prompt for a new password, then a confirmation of the new password. The password may be up to eight characters and is case sensitive.

```
LOGIN > TEST
ENTER NEW PASSWORD > TEST
RE-ENTER NEW PASSWORD > TEST
PASSWORD CHANGED
```

Please remember you password. If you forget your password, the unit needs to be returned to Dataprobe for re-initialization. There is a charge for this.

Set Baud Rate

```
ENTER BAUD =>
```

Valid selections are 300 600 1200 2400 4800 9600 19200 38400 57600 and 115200
This changes only the default speed. The Auto Rate Detector can always be invoked by sending the Enter Key several times.

Set Character Format

```
ENTER N,E,O >
```

Enter only the Parity, N, E or O for None, Even, Odd respectively. The 4P-MAS will automatically adjust for the number of data bits and 1 stop bit.

Set Lead Control

```
ENTER Y/N >
```

Enter Y to add RTS/DTR Lead control to the 4P-MAS. This mode allows the RTS or DTR of Ports A through D to select the Master Port. Change this setting to Yes if you require one or more of the devices connected to ports A through D to be able to dial out through the modem on the Master Port. See page 5 for a detailed description of Lead control.

Mode

Sets the 4P-MAS for either Terminal or Modem use. Each time selection 6 is chosen, this setting toggles.

Terminal Mode: The 4P-MAS does not monitor the connection status of the Master Port. This mode allows an unlimited number of login attempts. Use this mode for direct cable connections from a PC or Terminal to the 4P-MAS.

Modem Mode: The 4P-MAS monitors the DCD lead from the Master Port. Each time DCD goes high (indicating that a call has been established) the 4P-MAS generates the Login prompt. Three unsuccessful login attempts causes the 4P-MAS to hang up the modem. Use this setting when the 4P-MAS is connected to a dial modem.

Timeout

```
ENTER TIMEOUT =>
```

The 4P-MAS can automatically de-select a port if no data activity is detected received by the Master Port. This setting selects the length of time 0-99 minutes for this timeout. The Factory Default setting of 0 selects No Timeout.

Exit

Exit the programming menu and activate all current settings. If the baud rate and/or character format have been changed, Exit will enable those changes.

LEAD CONTROL

The 4P-MAS allows local ports to access the Master port by raising RTS or DTR. When the selected lead goes high on any of the four ports, it will establish a connection from that port to the Master Port. This works on a queued basis; as subsequent ports each raise their lead they will be serviced in order of appearance. Lead control will only be enabled only when the 4P-MAS is idle. If a caller has logged into the unit or Manual control is selected, the RTS and DTR leads are ignored. The Timeout feature, if enabled continues to operate when Lead control selects a port. Once a port is selected due to Lead control, Menu control and Manual control are locked out. The use of RTS or DTR is selected on a port by port basis using jumper selections on the printed circuit board. See page 6 for configuration details.

MANUAL CONTROL

The manual push-button switch on the front panel can be used for local control of the 4P-MAS. Each time the button is depressed, the port will cycle to the next port. To return the 4P-MAS to automatic operation, depress the push-button switch for over two seconds; all Port LEDs will turn off. Manual control will only be enabled only when the 4P-MAS is idle. If a caller has logged into the unit or Lead control is selected, the front panel switch ignored. The Timeout feature, if enabled continues to operate when Manual control is established. To override this feature, select Timeout = 0 from the Local Configuration menu.

INSTALLATION

Master and Switched Ports

Connection to the Switched A-D ports is made using 25 pin D Subminiature connectors on the rear of the unit. The following leads are supported for Asynchronous communications:

Pin	Designation
2	Transmit Data
3	Receive Data
4	Request to Send
5	Clear to Send
6	Data Set Ready
7	Signal Ground
8	Data Carrier Detect
20	Data Terminal Ready

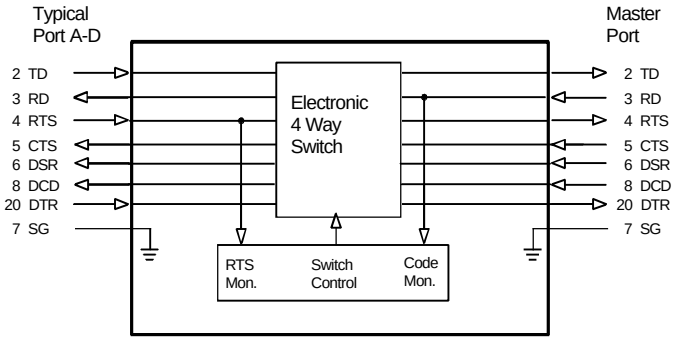
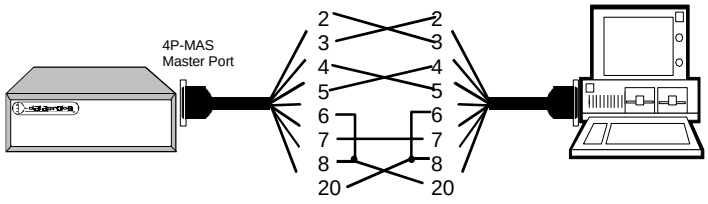


Figure 2
System Diagram

The four switched ports A-D are wired DCE (output data on pin 3,RD). The Master port is wired for as DTE. To directly connect a terminal device to the Master Port, a Null cable is required. Refer to Figure 3.

Null Connection to Terminal



Control Leads Required vary from device to device. Consult your operations manual for details on your specific needs.

Figure 3
Null Modem Connection

RTS / DTR Selection

Jumpers JP1 through JP4 allows selection of RTS or DTR as the control lead used in the Code/Lead Control mode. To access these jumpers, disconnect the power source and remove the top cover of the 4P-MAS by loosening the two screws on the underside of the unit. The jumpers are located behind the B and D Port Connectors. See Figure 4.

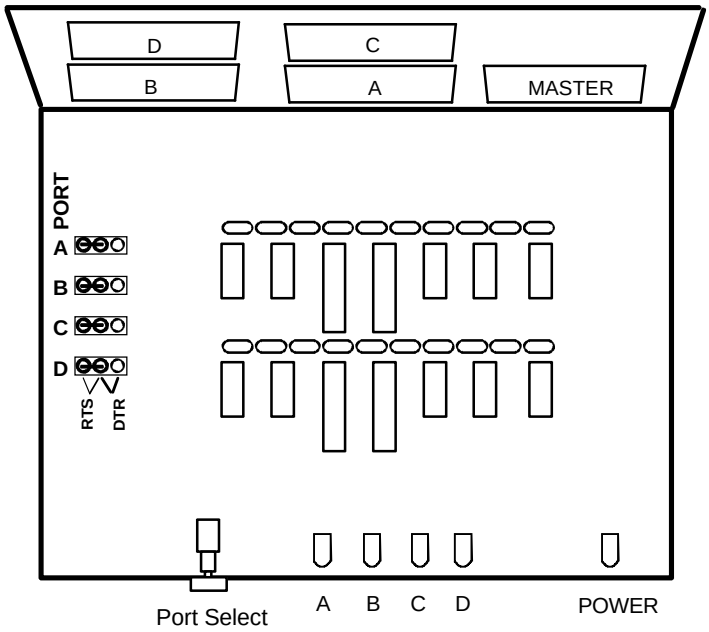


Figure 4
Component Location

INTERNAL MODEM OPTION

Dataprobe offers the following internal modem options with the 4P-MAS:

MOD-24 2400bps Modem
MOD-144 14.4 Kbps Modem
MOD-336 33.6 Kbps Modem

These modem options, when ordered with the 4P-MAS are supplied factory installed. They can also be ordered separately for field installation. Information on field installation is supplied with the modem.

Connection to the dial line is made using a RS-232 to Modular Adaptor, **Model MA-CAS**, supplied with the modem. This adaptor connects to the Master Port and to an RJ11 Modular Jack. The modem's FCC registration and AT command set are supplied in a separate document.

With the modem installed, the Master Port RS-232 port can still be used. With the Modular Adaptor removed, an external modem or terminal (with null cable) can be directly connected to the Master Port. The connections for the internal modem use pins 11 and 25, to avoid conflict with directly connected devices.

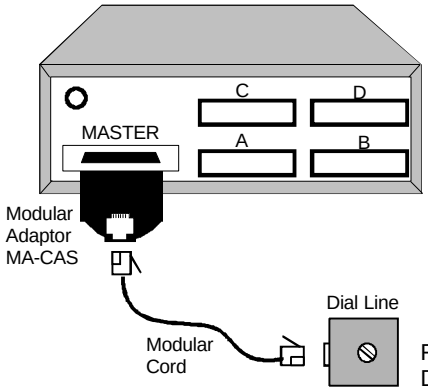


Figure 5
Dial Line Connection
with Internal Modem

SPECIFICATIONS

Physical

8" Wide x 6.25" Deep x 2.75" High.

Power

120VAC via Wall Mounted Power Supply. UL/CSA approved.

Communications

Speed:300 to 115,200 bps.
Character Format: 8 data, no parity, 1 stop bit / 7 data even or odd parity, 1 stop bit.
Interface: RS-232 Asynchronous .
Connectors: Ports A through D; 25 pin D Subminiature. Female.
Master Port 25 pin D Subminiature, Male.
Pins Supported: 1-8, 20.

TECHNICAL SUPPORT, RETURNS & WARRANTY

Dataprobe Technical Support is available 8:30AM to 5:30PM ET to assist you in the installation and operation of this product. To obtain Technical Support call our Tech Support Hotline at 201-967-8788, or Email us at tech@dataprobe.com. Please have the following information available when you call:

- Model of Product
- Serial Number
- Data of Purchase
- Name of Seller (if other than Dataprobe)

If you purchased this product through an **Authorized Dataprobe Reseller,** you should contact them first, as they may have information about the application that can more quickly answer your questions.

WARRANTY

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship for a period of One Year from the date of initial purchase. If the product should prove defective within that period, Seller will repair or replace the product, at its sole discretion.

Service under this Warranty is obtained by shipping the product (with all charges prepaid) to the address below. Seller will pay return shipping charges. Call Dataprobe Technical Service at (201) 967-8788 to receive a Return Materials Authorization (RMA) Number prior to sending any equipment back for repair. Include all cables, power supplies and proof of purchase with shipment.

THIS WARRANTY DOES NOT APPLY TO NORMAL WEAR OR TO DAMAGE RESULTING FROM ACCIDENT, MISUSE, ABUSE OR NEGLECT. SELLER MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY EXPRESSLY SET FORTH HEREIN. EXCEPT TO THE EXTENT PROHIBITED BY LAW, ALL IMPLIED WARRANTIES, INCLUDING ALL WARRANTIES OF MERCHANT ABILITY OR FITNESS FOR ANY PURPOSE ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE; AND THIS WARRANTY EXPRESSLY EXCLUDES ALL INCIDENTAL AND CONSEQUENTIAL DAMAGES.

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WARNING: The individual user should take care to determine prior to use whether this device is suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, the manufacturer makes no representation or warranty as to the suitability of fitness for any specific application.

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