



# CYBERFLEX

ETHERNET TRANSPORTER

RS232/RS485/AT Command TO ETHERNET

CyberFlex Model Number  
**CF232100AT**



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## OPERATING INSTRUCTIONS AND PROGRAMMING MANUAL

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Quality Communication Products by



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# INTRODUCTION

The Cybercomm **CyberFlex** Ethernet Transporter allows measuring devices, data control units, control panels, peripherals, security alarm boards, and integrated access panels, or any devices that will require RS232 / RS485 serial communications, can now become enabled to interconnect with other networked devices. The **CyberFlex** can also upgrade communication of any serial device that traditionally utilized dialup modems for extended communication. With its modem mode, the **CyberFlex** permits these modem dependant devices to also take advantage of the power in LAN, WAN, and Internet communication, instead of using the more costly public telephone networks used by modems. The **CyberFlex's** serial interface has standard protocols that are compatible with most serial devices on the market today, thus providing those devices with means of communication over the corporate Ethernet with its own unique IP address.

The unit has a DB9 serial **DCE** interface that is compatible with RS-232-C format. The **CyberFlex** also has a RS485 interface bus that directly connects to a side terminal plug. The **CF232100AT** supports RS232 standard full duplex data rates and RS485 standard half-duplex data rates. Listed below are operational flowcharts, providing a conceptual overview of the **CyberFlex**:

**CyberFlex TCP/IP Modes ( Server / Client )**



**CyberFlex Transporter to Transporter Modes**



In addition, the **CyberFlex** configuration controls are 1) web browser enabled and is also 2) serial terminal compatible making IP programming a snap.

## CYBERFLEX PANEL CONNECTIONS

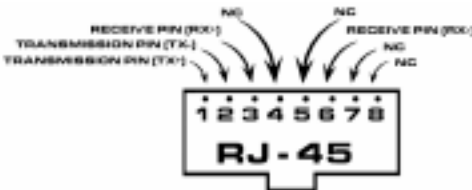
The **CyberFlex** should be installed in a location that does not exceed the Ethernet Cable rated maximum limit of 250 feet from device to wall port.



**Note:** For added protection and safety, all plug-in connections must be made only when all devices are turned off, including the **CyberFlex**.

### The Ethernet Connection

The network connection is made using an IEEE 802.3 compatible interface with a shielded RJ45 connector on the device front panel. Through here the **CyberFlex** can be connected to a hub or switch. The wiring must conform to a standard MDI interface (**AT&T 258**), so that a 1:1 cable having a maximum length of 250 feet can be used. This RJ-45 connector is used for connection to the Ethernet Data Port. Please review the following diagram:



# CYBERFLEX PANEL CONNECTIONS

## The Ethernet Connection – Continued

The Ethernet Connection is supported by the following network standards:

### 100BaseTx-10BaseT plus 100/10 Mbit/s

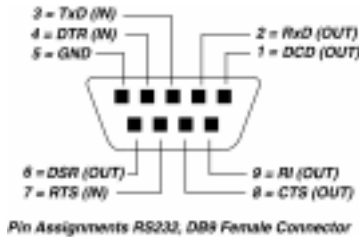
These models support both 10BaseT and 100BaseTx with of full-duplex transmission, possible. Switching between the two network speeds is automatic when using the auto sensing function of the **CF232100AT** as required by the hub or switch in use. One of the prerequisite for running at 100 Mbps is proper cabling (at least Cat. 5/ISO Class D).

## The Serial Connection

The **CyberFlex** unit offers users a range of choices on networking serial data to meet the various communication needs on the market today. Many facets of the serial interface in the **CyberFlex** are explained in this section.

### RS232 Serial Interface in Transport Mode or Modem Transport Mode

The pin configuration for the RS232 serial interface on the **CyberFlex** is identical to that of a Com Port on a PC, which allows the use of standard serial cables. When the **CyberFlex** is in modem transport mode, the pin configuration for the RS232 interface is identical to that of another type of Data Circuit Equipment (**DCE**), which also uses standard serial cables, the standard dialup modem. It is important that the pin positions on the **CyberFlex** interface and the serial device connected to it are configured with the identical transmission parameters and handshake procedures required for each mode, respectively.



In the following table, the default functions are listed for the individual pin signals assignments.

## DB9 CONNECTOR INFORMATION TABLE

PIN#	DISCRIPTION	DIRECTION	SIGNAL	HARDWARE SETTING INFORMATION
PIN 1	Data Carrier Detect	OUT	DCD	For active existing connections
PIN 2	Receive Data	OUT	RxD	Data Output
PIN 3	Transmit Data	IN	TxD	Data Input
PIN 4	Data Terminal Ready	IN	DTR	Disconnect for inactive connection
PIN 5	Ground	-	GND	
PIN 6	Data Send Ready	OUT	DSR	Always active
PIN 7	Ready To Send	IN	RTS	Hardware Handshake Input; Data Output only if active
PIN 8	Clear To Send	OUT	CTS	Handshake output; Active = Ready to receive data Inactive = Not ready to receive data
PIN 9	Ring Indicator	OUT	RI	For a "Ringing" connection 1s active; 4s inactive until connection is established then returned inactive

# CYBERFLEX PANEL CONNECTIONS

## CF232100 Wiring Connection

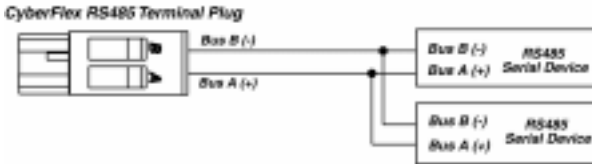
Packaged with all **CyberFlex** units are two connector bolts for the DB9 header on the front of the device. These bolts allow customer-supplied cables to be installed and secured to the **CyberFlex**. Cable suggestions are as follows:



## RS485 Terminal Port in Transport Mode or Modem Transport Mode

All **CyberFlex** units are supplied with an RS485 two-wire serial interface. This interface allows transmission to devices communicating in a corresponding 2-wire bus system. The **CyberFlex** allows these systems to transmit their data information over the TCP/IP network when it is connected to these devices, which can be located to distances up to 4000 feet away.

### RS485 2-Wire Bus Connection

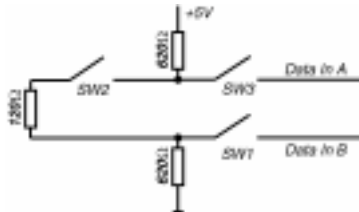


## RS485 Terminating

The RS485 mode requires a termination resistor on the bus system that ensures a defined rest state in the high-ohmic phases of operation. The RS485 is rated at 4000 feet using 26 AWG wire.

RS485 Termination Settings	SW1	SW2	SW3
Data "B" 620ohm Termination	ON	OPEN	OPEN
Data "A/B" 120ohm Termination	OPEN	ON	OPEN
Data "A" 620ohm Termination	OPEN	OPEN	ON

The connection of the bus system with a termination resistor is to be done in the conjunction with the RS485 3-Position Rocker Switches next to the Configuration Switch. By selecting the proper Rocker switch setting (shown above) to fit the termination selected as stated below:



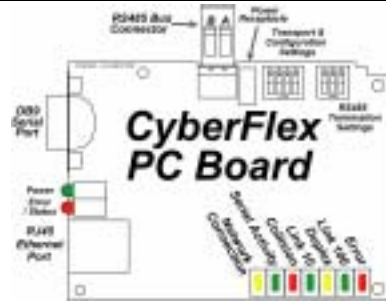
## The Supply Voltage

All Cybercomm **CyberFlex** units are supplied with a power transformer and barrel connector. Supply voltage for **CyberFlex** can be brought to the unit through the power supply or by the use of the barrel connector with flying leads for connection to a 12VDC external power supply. The feed voltage must be between 12VDC and 24VDC. The current draw is 150ma.

## CYBERFLEX PC BOARD MAIN COMPONENTS

The **CyberFlex** Printed Circuit Board is housed in a small, rugged, and flexible enclosure. Located on the PCB are the Rocker Switches for Configuration and RS485 Termination Settings, 12/24VDC power receptacle, RS485 bus plug and front and top mounted diagnostic LEDs as shown here: ⇨

The front mounted LEDs are positioned between the DB9 Serial Port and the RJ45 Ethernet Port and provide additional diagnostic information. The MAC Sticker is located on the bottom of the PCB.



## CYBERFLEX MOUNTING OPTIONS

The **CyberFlex** is housed in a small, rugged, and flexible enclosure with side mounting brackets for wall installation and a latching connector located in the rear of the housing for Dim-Rail mounting. This versatility provides **CyberFlex** users with a range of installation choices to accommodate various data equipment environments. For wall mounting we recommend the horizontal position, as shown here: ⇨

Although the **CyberFlex** is cool running, this suggested wall-mounting position assists towards better venting of the **CyberFlex** when installed in warmer data room environments and mirrors the Dim-Rail mounting position.



## CYBERFLEX TOP LIGHTS

The following information highlights the functions of the seven LED status Indicators located on the top rear of the **CyberFlex** unit:

### **Network Connection - Yellow LED**

The Connection LED indicates the establishment of a TCP/IP connection or Modem Mode connection with another **CyberFlex** or System Server.

### **Serial Activity - Green LED**

Flashes whenever there is serial activity on the **CyberFlex**.

### **Collision - Red LED**

The Collision LED flashes to indicate a collision occurrence on the network.

### **Link 10 - Green LED**

Glowes whenever the Ethernet Link is operating in 10baseT environment.

### **Duplex - Yellow LED**

Glowes whenever the Ethernet Link is operating in Full Duplex Mode

### **Link 100 - Green LED**

Glowes whenever the Ethernet Link is operating in 100baseT environment.

### **Error-Red LED**

The Error LED flashes to indicate errors involving the EEPROM and RAM problem interactions.

# CYBERFLEX FRONT LIGHTS

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The following information, highlights the functions of the three LED status Indicators located between the serial port and the RJ45 network connection:

### **Power-Green LED**

Indicates the presence of supply voltage. If the LED is not on, please check for correct supply voltage connections.

### **Status-Green LED**

Flashes whenever there is network activity on the **CyberFlex**.

### **Error-Red LED**

The Error LED flashes to indicate error conditions on the device or serial port.

# CYBERFLEX INITIAL SETTINGS

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### **Programming the CyberFlex**

The first step is to determine which modes setting you wish the **CyberFlex** to operate in. The available choices and the rocker switch settings are listed in the table below:

<b>Operating Modes</b>	<b>SW1</b>	<b>SW2</b>	<b>SW3</b>	<b>SW4</b>
<i>Serial Configuration</i>	<i>ON</i>	<i>OPEN</i>	<i>OPEN</i>	<i>OPEN</i>
<i>RS232 Serial Transport</i>	<i>OPEN</i>	<i>ON</i>	<i>OPEN</i>	<i>OPEN</i>
<i>RS232 Modem Transport</i>	<i>OPEN</i>	<i>OPEN</i>	<i>ON</i>	<i>OPEN</i>
<i>RS485 Serial Transport</i>	<i>OPEN</i>	<i>OPEN</i>	<i>OPEN</i>	<i>ON</i>
<i>RS485 Modem Transport</i>	<i>OPEN</i>	<i>OPEN</i>	<i>ON</i>	<i>ON</i>
<i>Load Factory Default</i>	<i>ON</i>	<i>ON</i>	<i>ON</i>	<i>ON</i>

Once you decide the operating mode and identify the 4-position Rocker Switch Setting for that mode you can continue with the next action in the selected operating mode.

### **The Configuration Mode**

To set the **CyberFlex** unit in the Serial Configuration mode, you begin by first opening the housing. To open the **CyberFlex**, 1) remove the RS485 Plug and 2) remove the power connector, and 3) plug a DB9 connector into the serial port. After tightening the two mounting screws on the DB9 plug into the connection bolts, pull on the plug, while holding the housing case, and remove the circuit board from the housing and place the 4-Position Configuration Rocker Switches as listed below:

<b>Rocker Switch Settings</b>	<b>SW1</b>	<b>SW2</b>	<b>SW3</b>	<b>SW4</b>
<i>Serial Configuration</i>	<i>ON</i>	<i>OPEN</i>	<i>OPEN</i>	<i>OPEN</i>

Once this action is completed and the PCB is returned to it's housing case, the unit is now ready for Serial Port programming. Reactivate the unit by reconnecting power and begin.

### **Assigning the IP Address**

The **CyberFlex** is factory set to IP address 000.000.000.000. Before you can begin network communication with the **CyberFlex**, you need to specify an IP address that is valid for your network. Your Network System Administrator should provide you with this IP Address. If you have a small network with no routing, use the IP address of your PC and simply change the last digit then enter that new IP Address in the **CyberFlex**.



**NOTE:** The IP address must be unique within the network!

# CYBERFLEX INITIAL SETTINGS

## Assigning through the Serial Port

You begin the programming process by connecting the **DCE** serial port of the **CyberFlex** to a computer. For a standard PC or laptop, you will need a DB9 Male to a DB9 Female, RS232 cable. The serial port parameters of the selected terminal program you use (HyperTerminal, ProComm Plus, ect) should be set to 9600 baud, no parity, 8 bits, 1 stop bit, no handshake.

Reset the **CyberFlex** by interrupting the power. When the Serial Activity Green LED momentarily lights up, the terminal screen will display introduction information and show the line "Enter the Configuration Password". Type the default password "dcsp" and press <Enter>. Once accepted, the system information will be displayed as shown below:



Once the current information has completed scrolling you can begin serial port programming and see first hand why we say: "Programming the **CyberFlex** is as easy as A-B-C".

To assign the required initial LAN/Serial perimeters, you must set the "A, B, and C" choices in the **CyberFlex** programming. Begin this process we, of course, choose "A. Set IP address" and use the format (xxx.xxx.xxx.xxx) to enter the IP address along with the desired Server and Client ports, and end the entry by pressing <Enter> and this will be displayed:

```
Enter the choice: "A. Set IP Address"  
Enter the IP address: 000.000.000.000 (xxx.xxx.xxx.xxx User Selectable)  
Enter the Server Port number: 5000 (Listening Port - User Selectable)  
Enter the Client Port number: 5001 (Initiation Port - User Selectable)
```

Your next required action is to enter the IP address of the programming computer by selecting "B. Accepted Systems Addresses" and <Enter>. These two entries are required to gain access past the IP Barrier and to **WebTool**, our embedded web-based configuration programmer.

```
Enter the choice: "B. Accepted System Addresses"  
Enter the IP address: 000.000.000.000 (xxx.xxx.xxx.xxx User Selectable)
```

The last data entry selection in this serial mode is "C. Set Gateway". This maybe required if the programming computer is in a remote site with a different subnet. You may chose to complete full programming of the unit in the serial mode and deliver it fully programmed, but chances are that you will program the basic information, enable or disable key sections, and then ship the units to various sites to be ready for complete **WebTool** programming when placed in service. To program, select "C. Set Gateway" enter the Gateway IP Address and <Enter>.

```
Enter the choice: "C. Set Gateway"  
Enter the IP Gateway Address: 000.000.000.000 (xxx.xxx.xxx.xxx User Selectable)
```


You can view all your entries at any time by selecting N and <Enter>. You will now need to save your changes to the non-volatile EEPROM. You save your changes by choosing selection S and pressing <Enter> and this is what is displayed:

```
Enter the choice: "S. Save Configuration to EEPROM"  
Saving the parameters to EEPROM...  
Saved the parameters to EEPROM  
Power OFF the CyberFlex. Set the desired DIP Switch setting. Power ON the Unit.
```

# CYBERFLEX INITIAL SETTINGS

## Assigning through the Serial Port - Continued

All other settings such as Set Host Baud Rate (Selection G), Subnet Mask (Selection D), etc., can all be done during this programming session or you can close it and then access **WebTool**.

 **NOTE:** This serial method functions regardless of whether the **CyberFlex** already has an IP address or not and can be repeated as many times as needed. Use this method if you don't know the IP address or have forgotten it.

## CYBERFLEX TCP/IP CONFIGURATION SETTINGS

### IP Mapping using the "ARP" Command (Windows 95/98/NT, UNIX)

For "ARP" communication a computer will be required, a computer located in the same network segment as the **CyberFlex** and which has TCP/IP protocol installed. You can read off the Ethernet/MAC address of the **CyberFlex** from the sticker inside the enclosure on the PC Board: ⇨



Under MS/DOS Prompt, first ping the **CyberFlex** and then view static entry into the ARP table of the computer using the following command line:

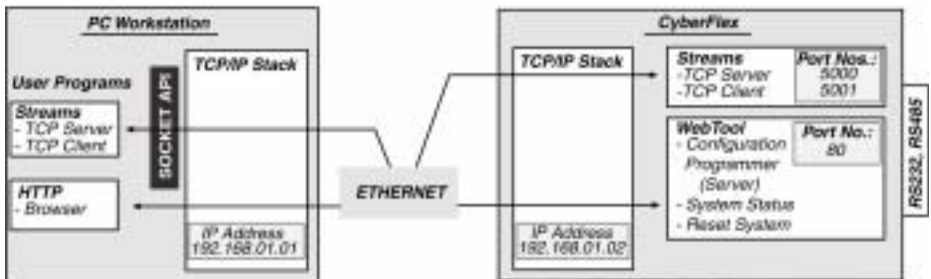
	arp -s	[IP address]	[MAC address]
e.g. under Windows:	arp -s	192.168.022.110	00-09-D7-10-02-A3
e.g. under SCO UNIX:	arp -s	192.168.022.110	00-09-D7-10-02-A3



**NOTE:** The IP addresses must be without leading zeros in all Windows environments. Otherwise the entry is incorrectly interpreted by the system.

### Addressing in the TCP/IP Network

Addressing in the TCP/IP network is done in two steps. First the network station itself is addressed with the IP address, and then the services of this network station are addressed with TCP port numbers. Each IP address must be unique throughout the network, and each port number must be unique for the network service required. Addressing the serial ports is done analogously. The **CyberFlex** unit is assigned an IP address upon installation (see "Assigning the IP address" Page 7). This address is used to access the **CyberFlex**. The individual services are user addressed using, for example, the following port numbers as depicted below:



When the service begins, a certain port number is assigned to a server process; the port numbers of the client process are normally assigned each time the program starts. In the **CyberFlex** all the processes (client and server) can utilize the factory-default port numbers or any customer-specified server port numbers.

# CYBERFLEX TCP/IP CONFIGURATION SETTINGS

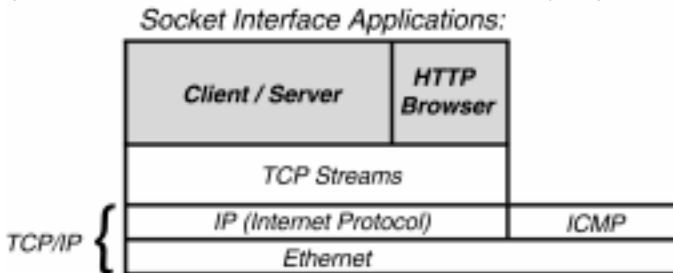
## The Serial Port as seen by the Network

The actual raw data is exchanged between the application and the **CyberFlex** serial interface port using TCP/IP. Data transmission over the RS232 serial connection is Full Duplex communication and data transmission for the RS485 bus connection is 2-wire Half Duplex. Data transmission for both serial interfaces can be enabled up to a maximum speed of 230,000kps. Ethernet configurations and Serial Port parameters can be configured over the network from any TCP/IP station by using the embedded **WebTool** software suite. In addition to simple transmission of the data, the **CyberFlex** supports the following protocols:

◆ IP ◆ TCP (Client/Server) ◆ DHCP ◆ HTTP ◆ ARP (IP mapping) ◆ ICMP (Ping) ◆

## Configuring the TCPIIP Modes

There are several possibilities for transporting serial data. The **CyberFlex** serial interface allows you to transport the data on the socket level directly as TCP streams – in other words, without any additional higher-order protocol. This illustration shows the protocol layering in the **CyberFlex**:



In server mode, the **CyberFlex** can be activated when an “Accepted Systems” client TCP/IP station directs a connection request to the **CyberFlex**. These processes are automatic and provide transport services when properly configured.

## Data Transfer per TCPIIP Sockets

Using the socket Application Programming Interface (*under Windows WinSock, under UNIX Berkley Sockets,...*) it is possible to implement a variety of applications in the form of client or server processes on TCP/IP computers. The Application Programming Interface (API) offers all the functionality for transporting data over the network. With API you can customize your application program to incorporate the **CyberFlex** for your particular requirements.

The **CyberFlex** provides the protocol on the socket level for data transfer: Client/server process with **TCP** sockets (streams). **TCP** is a connection-oriented protocol, i.e. during data transfer there is a fixed connection between client and server. **TCP** has all the mechanisms for opening a connection, closing it and ensuring errorless data transfer over the network.

## TCP Client/Server mode (Port number 5000/5001)

No other settings are necessary for the TCP server mode, if you use the default port 5000 for Server and 5001 for Client. A connection to the **CyberFlex** port can be opened from any “Accepted Systems and Remote System Server” TCP/IP station in the network.

Once a connection is established, data can be exchanged bi-directional between the two processes. If the port is in use by a client process, further connection requests are rejected until the active connection is closed. The connection is controlled by the user program (client process), which opens (*connect()*) and closes (*close()*) the connection.

# CYBERFLEX TCP/IP CONFIGURATION SETTINGS

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## *CyberSocket Serial interface*

The CyberSocket Serial Interface enables defined communication between **CyberFlex** and the device connected to their serial port. Comparable to the TCP/IP socket interface in Windows or UNIX system, this interface offers the following capabilities for the serial port:

- ✦ Opening and closing up to 3 data connections at the same time
  - ✦ The **CyberFlex** independently informs the serial terminal device as part of the protocol of changes in the system or connection status and LED visual Information
  - ✦ Packet-oriented transmission of serial data in both directions, i.e. sending of packets with packet start characters, packet headers, data, packet end characters
  - ✦ Transmission of the network destination address (IP address, connection port) to the **CyberFlex** and the network sender to the serial device with the packeted data
  - ✦ Timed Automatic socket resets of inactive ports to prevent system lockout due to network crashes and system freezes.
  - ✦ Allowing full Configuration of the **CyberFlex** serial port and network parameters.
  - ✦ Core Processor of **WebTool** HTML configurations screens.
- Additional information can be made available by contacting us through our Web Site at [www.dcsecurityproducts.com](http://www.dcsecurityproducts.com)

## CYBERFLEX WEBTOOL

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### *Accessing information through the CyberFlex WebTool*

The **CyberFlex** can be configured and information viewed by using a standard browser providing access from a remote location. The prerequisite for this configuration access is that the **CyberFlex** has already been assigned an IP address and the programming PC Workstation's IP Address is entered and listed in the **CyberFlex** "Accepted Systems" IP Barrier. An IP Address that is valid in the network at which it will be accessed is also required (see "Assigning the IP address" Page 7). The configuration can be done from any computer having a network connection, TCP/IP stack, and standard web browser (**WebTool** has been optimized to perform best in MS Internet Explorer and is the preferred choice).

The **CyberFlex** provides a comprehensive Hypertext menu suite called **WebTool**, created for easy interrogation of network data and device programming. To access **WebTool**, start a web session by opening/starting your Web Browser. Next, in the URL address type the following:

[\*\*http://\(CyberFlex IP Address\)\*\*](http://(CyberFlex IP Address))

### *WebTool Initial Browser Screen*

When a link with the selected **CyberFlex** is established, the **WebTool** Browser Screen is shown and requests you to choose between **WebTool** Configuration Programmer and the **WebTool** Status Screen. You make your choice with the cursor and select the desired "Enter" button.

# CYBERFLEX WEBTOOL

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## WebTool Initial Browser Screen – Continued

Here is the **WebTool** Browser Screen that is displayed when a link has been established:



# CYBERFLEX WEB CONFIGURATION SETTINGS

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## WebTool Configuration Password Screen for Remote Programming

When entering the Configuration Programmer, it requests a configuration password. You must have a valid configuration password to enter and modify the configuration. Enter the password in the text box area and click the login button contained in the screen below:



If the system is new and no password has been created and added, the default password of 'dcsP' can be used. After the password authentication, the main configuration screen is displayed with data boxes of current information, which now can be selected and modified for revised programming of the selected **CyberFlex**.

# CYBERFLEX WEB CONFIGURATION SETTINGS

WebTool Configuration for Remote Network Programming of the CyberFlex

The following overview shows the complete **WebTool** Programming menu of the **CyberFlex**.

**CYBERFLEX WEBTOOL**  
**ETHERNET TRANSPORTER PROGRAMMER**

---

**ETHERNET REMOTE SYSTEM SERVERS**  
**ACCEPTED SYSTEMS                      SERIAL PORT**

---

Ethernet ( MAC ) Address : 00:09:D7:00:00:00

**TRANSPORTER LOCATION:**

(This is an optional text window that is provided to assist in location recognition. This text window allows for a maximum of 64 characters to aid in identification of the installation locale. Do not use the "€" character in any description.)

Set the following CyberFlex Operating Parameters and press Set/Reboot Button (at the bottom of the page) for any changes to take effect immediately. Use the Clear Entries Button (also, at the bottom of the page) to clear any new entries and return to the previous settings.

**ETHERNET PARAMETERS:**

IP Address:

Server Port:  : Listen for TCP/IP connections calls

Client Port:  : Initiate the TCP/IP connections

Subnet Mask:

Gateway Address:

DHCP:

**SERIAL PORT PARAMETERS:**

Serial Baud Rate:

Data Format:

Flow Control:

## CYBERFLEX WEB CONFIGURATION SETTINGS

### ACCEPTED SYSTEMS:

IP Barrier Protection (Enhanced Security Feature)

Accepted Systems IP Barrier Feature -  Enable

When enabled, the CyberFlex will allow communication with only the following IP Addresses. All IP Addresses entered anywhere throughout the various CyberFlex *WebTool* sections must be listed here first.

Accepted System 1 IP address:

Accepted System 2 IP address:

Accepted System 3 IP address:

Accepted System 4 IP address:

Accepted System 5 IP address:

Accepted System 6 IP address:

Accepted System 7 IP address:

Accepted System 8 IP address:

Accepted System 9 IP address:

Accepted System 10 IP address:

Accepted System 11 IP address:

Accepted System 12 IP address:

Accepted System 12 IP address:

Accepted System 14 IP address:

Accepted System 15 IP address:

Accepted System 16 IP address:

### REMOTE SYSTEM SERVERS:

Remote System Servers Feature:  Enable

If Remote Server feature is enabled **AND** there is **NOT** an active client connected, the CyberFlex will initiate interactive communication when data is received on the serial port to the following systems and specified port listed below. All IP Addresses entered below must also be listed in "Accepted Systems" if the Accepted Systems IP Barrier is enabled.

Remote System 1 IP Address:  Port:

Remote System 2 IP Address:  Port:

Remote System 3 IP Address:  Port:

Remote System 4 IP Address:  Port:

Remote System 5 IP Address:  Port:

# CYBERFLEX WEB CONFIGURATION SETTINGS

Remote System 6 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 7 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 8 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 9 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 10 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 11 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 12 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 13 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 14 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 15 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>
Remote System 16 IP Address:	<input type="text" value="000.000.000.000"/>	Port:	<input type="text" value="5000"/>

Click the **Set/Reboot** Button to write the above changes to the CyberFlex's EEPROM and Reboot the System for the new parameters to immediately take effect. Press the "Clear Entries" button to CLEAR all new entries and return to previous settings.



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## Exploring the Features of WebTool

Now that you have accessed **WebTool**, you can now begin programming of the new information in the **CyberFlex**. This program is always accessible provided there is power to the **CyberFlex** and the unit is not in configuration mode.

The first thing you notice is the Transporter Location Window. Use this optional feature to describe the installation location of the **CyberFlex**. This text information will be useful in identifying the Ethernet Transporter by its named location as well as by its IP Address.

**TRANSPORTER LOCATION:**

(This is an optional text window that is provided to assist in location recognition. This text window allows for a maximum of 64 characters to aid in identification of the installation locale. Do not use the "&" character in any description.)

# CYBERFLEX WEB CONFIGURATION SETTINGS

## Changing the IP Address

WebTool's next menu item is Ethernet Parameters and by utilizing the text boxes below:



Changing an IP Address is a snap. Enter the new IP address, if you want to change it. After entering the new IP address, enter the port number for TCP/IP Connections and your done.



being saved.

**Note:** As previously stated, the IP Address needs to be accurately specified and based on the network address of the TCP/IP network. If the IP number is improperly entered and/or does not conform to TCP/IP protocols, a System Error Screen (see "CyberFlex WebTool Error Screens" Pg. 19) will display when the Set/Reboot button is engaged thus preventing the new information entered from

## Changing the Subnet and Gateway Address

Entering or Changing the Gateway Address and subnet mask is just as easy as was shown previously and is displayed in the Data Box listed below:



Enter the IP address of the required Gateway, if you will be making connections to other subnets. The subnet mask is only needed, if the **CyberFlex** will be making connections to another subnet. Enter the subnet mask in which the **CyberFlex** is located (i.e .255.255.255.0).



**Note:** The IP address determines the network class. From this is derived a default subnet mask (e.g. 255.255.0.0 for a Class B network). You are only allowed to extend this to the right. Improper numeric data entries are automatically corrected when the Set/Reboot button is engaged.

## Setting the DHCP Option

When enabled, the DHCP protocol allows the **CyberFlex** attempts to get an IP address after each reset of a DHCP server. The factory setting for the DHCP protocol is disabled.



**Note:** Some DHCP servers also assign an IP address from their dynamic pool, in response to IP Address requests. To prevent the **CyberFlex** from getting a different IP address after every reset in such environments, you must configure the DHCP server to assign the same IP Address to the **CyberFlex** and, in turn, you will need to load that IP Address in Accepted Systems". It's important to remember, the **CyberFlex** is still subject to the same principles and controls that govern its constant operation, even with DHCP enabled.

# CYBERFLEX WEB CONFIGURATION SETTINGS

## *Changing the Serial Baud Rate, Data Format and Flow Control*

Entering or Changing the Serial Port Parameters is provided for in this section. The **CyberFlex** can transmit data to a maximum speed of 230,000kps. With the pull down menu you can change the baud rate as required. Next you can modify the data format and flow control to the required settings for proper operation with your serial device.



## *Resetting the CyberFlex*

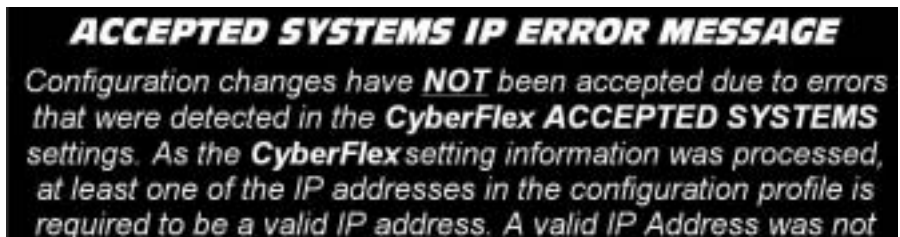
If you determine that any of the data was entered is incorrect, you can select the “Clear Entries” and the previous settings will be returned allowing you to start over again.



Once you are finished with all the data entries, you can select “Set/Reboot” and reset the **CyberFlex**, and all the new information will be programmed and stored in non-volatile RAM of the **CyberFlex**. If the data entered was incorrect or doesn't conform to accepted protocols, you will receive an error message highlighting the problem section along with general instructions.

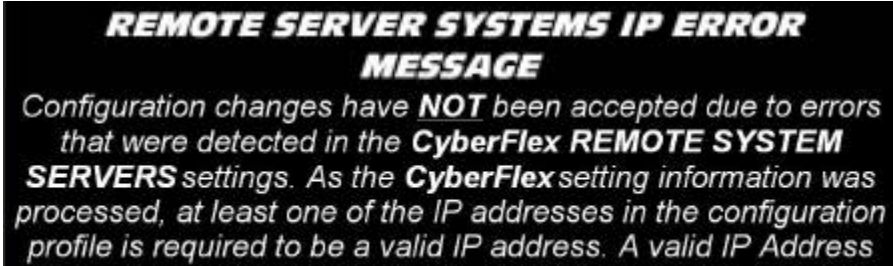
## *CyberFlex WebTool Error Screens*

From time to time, while programming, errors are bound to happen. These errors screens were designed to assist you in correcting the problem. Here are portions of the various **WebTool** error screens to become acquainted with:



# CYBERFLEX WEB CONFIGURATION SETTINGS

## CyberFlex WebTool Error Screens - Continued



### Understanding CyberFlex Accepted Systems

To provide additional security in the **CyberFlex**, DC Security Products has created an IP Barrier designed for select communication to remote IP devices listed in “Accepted Systems”. An Accepted System is a pre-approved IP Address that is given an authorized pathway through our IP Barrier for communication to the **CyberFlex**. A portion of the IP Barrier is shown below:



“Accepted Systems” IP Addresses are entered here. When enabled, the IP Barrier in the **CyberFlex** will block any **unlisted** IP Address from attempting a connection or requesting communication. The IP Barrier can be enable/disable (factory default is enable) in this section. This controlled IP environment offers one more secure level for network communication.

### Understanding CyberFlex Remote System Servers

When the “Remote System Servers” is enabled (factory default is enabled), the **CyberFlex** has the ability to act as a TCP Client itself and open a connection to the configured TCP server and close it again when serial data has stopped and after an expired timeout period. The connection is re-opened anytime data is received at the serial interface. The prerequisite for this communication is that the “Remote System Servers” are enabled **and** there is **not** a current connection to a TCP server. The **CyberFlex** will initiate connections on its default TCP port 5000 or on the port configured for a specific purpose. A portion of the menu is shown below:



A connection to the **CyberFlex** port can be opened from any “Accepted Systems” as well as the included “Remote System Servers” in the network. If the port is in use by a client/server process, further connection requests are rejected until the active connection is closed. The

# CYBERFLEX WEB CONFIGURATION SETTINGS

## Understanding CyberFlex Remote Systems - Continued

connection is controlled by the user program (client process), which opens (*connect ()*) and closes (*close ()*) the connection. Once a connection is established, data can be exchanged bi-directionally between the two processes. The unit transports data from the TCP streams to the serial interface and, in return, transmits serial data in order to convey it to the client process.



**Note:** An easy way to understand and remember the purpose for “Accepted Systems” and “Remote System Servers” is to think about it this way: Accepted Systems are pre-programmed and approved IP Addresses that provide pathways through the IP Barrier giving full communication access to the **CyberFlex**. Remote System Servers are pre-programmed IP Addresses provided to the **CyberFlex** for use when the Ethernet Transporter needs to request and initiate network communication. The **CyberFlex** will systematically poll down the listed IP Addresses until a connection is made.

## Understanding CyberFlex Failsafe Processes

The **CyberFlex** core processes are always polling the network for performance status, and at the same time these processes reset any open ports after 300 seconds of no data activity. These failsafe measures are design to provide accessibility to the **CyberFlex** whenever any LAN / WAN failure conditions are repaired and then returned to a normal state. These various network states can also be evaluated by viewing the **CyberFlex**'s LED status indicators, providing valuable visual diagnostic information to anyone attempting provide a preliminary assessment of communication problems when a computer is presently unavailable. For any additional technical documentation, please contact us through our website at [www.dcsecurityproducts.com](http://www.dcsecurityproducts.com)

### CyberFlex WebTool Status Screen

While at the **WebTool** Browser Screen (see “WebTool Initial Browser Screen” pg. 11), you can also chose to enter the **WebTool** Network Status Screen. In this screen you can view the **CyberFlex** connection data to assist in evaluating activity. You will find information of the connected IP addresses as well as the ports used for socket communication. The **WebTool** Network Status Screen is displayed below:



# CYBERFLEX RS232 TRANSPORT MODE

## The RS232 Transport Mode

To place the **CyberFlex** in the RS232 transport mode you begin by first opening the housing. To open the **CyberFlex**, 1) remove the RS485 Plug and 2) remove the power connector, and 3) plug a DB9 connector into the serial port. After tightening the two mounting screws on the DB9 plug into the connection bolts, pull on the plug, while holding the housing case, and remove the circuit board from the housing and place the 4-Position Configuration Rocker Switches as listed below:

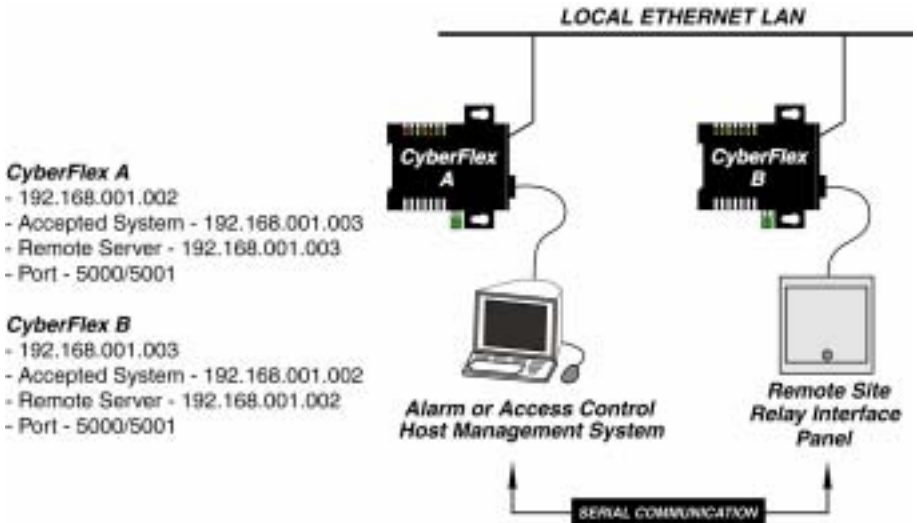
<b>Rocker Switch Settings</b>	<b>SW1</b>	<b>SW2</b>	<b>SW3</b>	<b>SW4</b>
<b>RS232 Serial Transport</b>	<b>OPEN</b>	<b>ON</b>	<b>OPEN</b>	<b>OPEN</b>

Once this action is completed and the PCB is returned to its housing case the unit is now ready for serial data transporting. Return the RS485 plug and reactivate the unit by reconnecting power and begin.

The following are illustrations that highlight installation examples of the **CyberFlex** in RS232 transport mode:

### Application Examples:

- 1) **Application:** A control program communicates with a Relay Interface Panel. The system demonstrates a simple design, where sockets are opened and closed as serial information is detected on the serial interface.

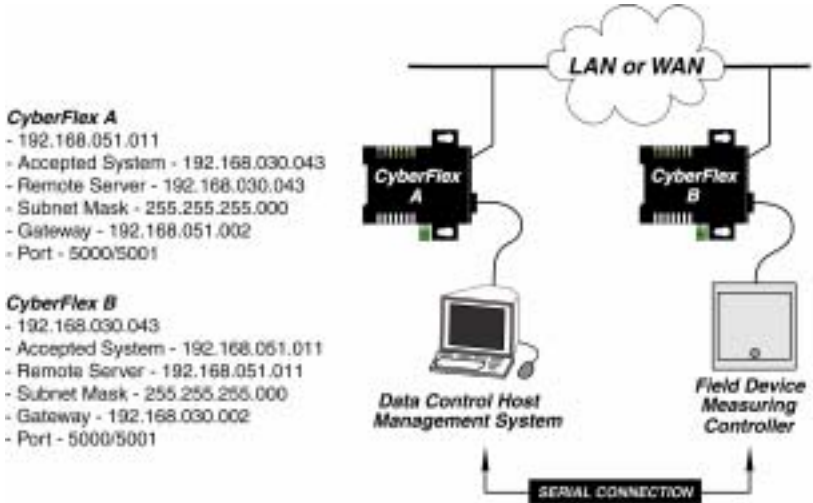


# CYBERFLEX RS232 TRANSPORT MODE

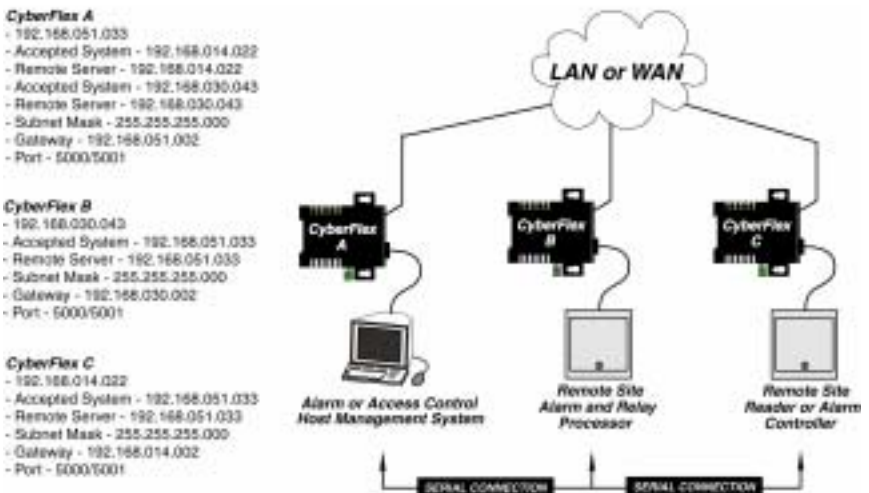
## The RS232 Transport Mode

### Application Examples - Continued:

- 2) **Application:** An Data Control Management program communicates with a Field Controller Panel in a transporter-to-transporter environment over a Wide Area Network where serial data is transported bi-directionally.



- 3) **Application:** A Host Management Program polls and communicates with multiple Reader Controllers and Alarm Processors. The Reader Controllers and Alarm Processors can independently send and receive data directly to the Host Management System program by way of available sockets connections through the LAN Switch and Router/Gateway.



# CYBERFLEX RS485 TRANSPORT MODE

## The RS485 Transport Mode

Set the **CyberFlex** in the RS485 transport mode you begin by first opening the housing. To open the **CyberFlex**, 1) remove the RS485 Plug and 2) remove the power connector, and 3) plug a DB9 connector into the serial port. After tightening the two mounting screws on the DB9 plug into the connection bolts, pull on the plug, while holding the housing case, and remove the circuit board from the housing and place the 4-Position Configuration Rocker Switches as listed below:

Rocker Switch Settings	SW1	SW2	SW3	SW4
RS485 Serial Transport	OPEN	OPEN	OPEN	ON

Once this action is completed and the PCB is returned to its housing case the unit is ready for RS485 Serial Bus Transporting. Return the RS485 plug and reactivate the unit by reconnecting power and begin.

The following are illustrations that highlight installation examples of the **CyberFlex** in RS485 transport mode:



**NOTE:** Its important to remember when using the RS485 mode, you may be required to use the proper terminating resistor (see page 5 “RS485 Terminating”) when connecting to and existing RS485 2-wire system. It may also be prudent to refer to the serial devices’ communication information associated with the RS485 system being connected to.

### Application Examples:

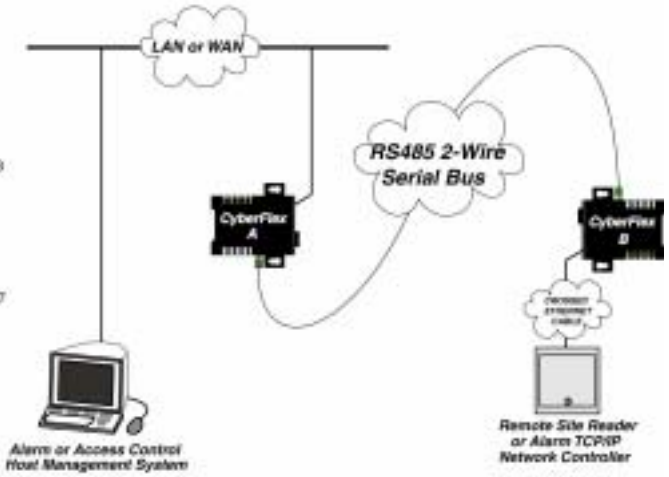
- 1) **Application:** An access control network panel is located in a building that is not part of the corporate LAN. The next closest building that is part of the network is 3500 feet away. There are abandoned phone lines between the buildings. One **CyberFlex** is used to communicate through 4000 feet of two-conductor wire to a second **CyberFlex**, which connects with the Host. This effort allows the LAN device to transmit by using the 2-wire copper that is available in the unconnected building.

**Host Computer**  
 - IP: 192.168.0.40.023  
 - Subnet Mask - 255.255.255.000  
 - Gateway - 192.168.0.40.002  
 - Port - 5000/System Selected Port

**CyberFlex A**  
 - IP: 192.168.0.00.043  
 - Accepted System - 192.168.0.40.023  
 - Remote Server - 192.168.0.40.023  
 - Subnet Mask - 255.255.255.000  
 - Gateway - 192.168.0.00.002  
 - Port - 5000/System Selected Port

**CyberFlex B**  
 - IP: 192.168.0.00.022  
 - Accepted System - 192.168.0.00.077  
 - Remote Server - 192.168.0.00.077  
 - Subnet Mask - 0.0.0.0  
 - Gateway - 0.0.0.0  
 - Port - 5000/System Selected Port

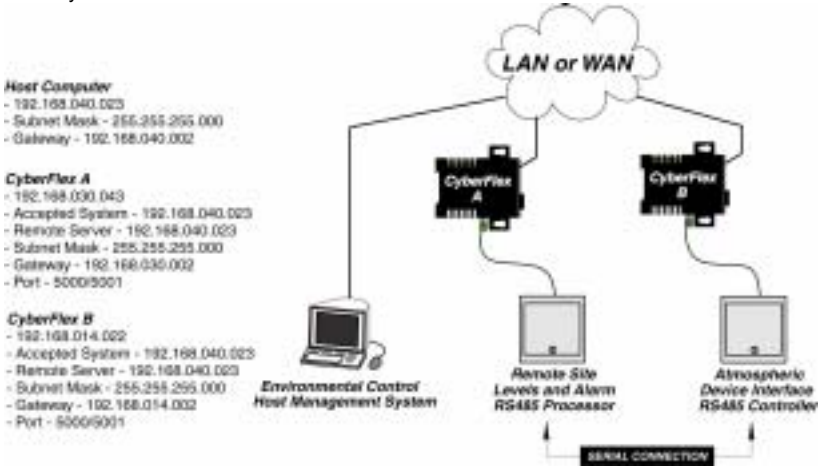
**TCP/IP Network Controller**  
 - IP: 192.168.0.00.077  
 - Subnet Mask - 0.0.0.0  
 - Gateway - 0.0.0.0  
 - Port - 5000/System Selected Port



# CYBERFLEX RS485 TRANSPORT MODE

## Application Examples - Continued:

- 2) **Application:** An Environmental Control Program polls and communicates with its RS485 field device interface panels by linking the remote site panels through CyberFlex's two-wire Serial interface RS485 bus:



# CYBERFLEX MODEM TRANSPORT MODE

## The Modem Transport Mode

To set the **CyberFlex** in the modem transport mode you begin by first opening the housing. To open the **CyberFlex**, 1) remove the RS485 Plug and 2) remove the power connector, and 3) plug a DB9 connector into the serial port. After tightening the two mounting screws on the DB9 plug into the connection bolts, pull on the plug, while holding the housing case, and remove the circuit board from the housing and place the 4-Position Configuration Rocker Switches as listed below:

### For RS232 Modem Operation

Rocker Switch Settings	SW1	SW2	SW3	SW4
RS232 Modem Transport	OPEN	OPEN	ON	OPEN

### For RS485 Modem Operation

Rocker Switch Settings	SW1	SW2	SW3	SW4
RS485 Modem Transport	OPEN	OPEN	ON	ON

Once this action is completed and the PCB is returned to its housing case the unit is ready for Modem Mode Transporting. Return the RS485 plug and reactivate the unit by reconnecting power and begin.

### At Command Set Modem Mode

Once the TCP/IP network configuration is complete and the Dip Switch mode is set, the **CyberFlex** behaves on its serial interface side (RS232 or 2-wire RS485) like a dial-up modem with an AT command set. Instead of the dial connection, now you have a TCP/IP connection over the LAN or WAN. The dial-up number from the telephone network is now replaced by the IP address of the desired communications partner (see "AT Commands").



# CYBERFLEX MODEM TRANSPORT MODE

## Data Mode (Online mode)

This mode is available only when there is an existing connection to a communications partner in the network. The AT command interpreter is now deactivated and all incoming serial data are passed along without further processing to the network. You can switch into command mode by using the Escape sequence "+++ ". To maintain the binary transparency of the data mode in spite of the processing of this character sequence, the **CyberFlex** only executes the change if the following chronological sequence is maintained:

**at least 1s no data received -> escape sequence -> 1s no data exchange**

The **CyberFlex** returns to the command mode and sends the **OK** result code and will not disconnect until it receives an **ATH** Command. The **ATO** command will return it back to Data Mode if necessary. As an alternative to the Escape sequence, the RS232 input DTR can be configured for switching to command mode (for more information, see **&Dn** on page 28.)

## AT Command Set Detail

The **CyberFlex** will respond to the commands detailed in the following pages of this manual. The parameters applicable to each command are listed with the command description and whose processing is done according to the following rules:

- A) No additional commands are allowed to follow A, D, 0, Z and &Z in the same command line. In the case of A, 0 and Z they are ignored, but D and &Z are considered to be part of the call number.
- B) Omitting a numerical parameter has the same effect as entering a 0.

In addition to these commands "A" (without a preceding AT or terminating character.) is accepted as an entry for repeating the last command line in full.

## CYBERFLEX SCHEDULE OF AT COMMANDS

AT Command	Select Line Modulation	Parameter
<b>A</b>	Accept Incoming Calls	-
<b>A/</b>	Repeat Last Command	-
<b>Dx</b>	Selects IP Address and go online	IP Address
<b>En</b>	Off-Line Echo Character Option	<i>n</i> = 0,1
<b>Fn</b>	On-Line Echo Character Option	<i>n</i> = 0,1
<b>H</b>	Connect Control Option	
<b>In</b>	Identification/Checksum Option	<i>n</i> = 3
<b>O</b>	On-line Command	-
<b>Qn</b>	Result code suppression on/off	<i>n</i> = 0,1
<b>Vn</b>	Result code as text instead of number on/off	<i>n</i> = 0,1
<b>Zn</b>	Recall Stored Profile in non volatile memory	<i>n</i> = 0, 1,
<b>+++</b>	Escape Code Sequence	-
<b>&amp;Dn</b>	Function of DTR input	<i>n</i> = 0, 2,
<b>&amp;V</b>	View Active Configuration and User Profiles	-
<b>&amp;Zn=x</b>	Store destination IP (telephone number)	<i>n</i> = 0, 1, 2, 3,

# CYBERFLEX MODEM TRANSPORT MODE

**A**

## Accept Incoming Call

If the Ring sequences sent by the **CyberFlex** cause the serial application to detect an incoming call, the call may be accepted by sending this command. After the network connection to the communications partner is established, the **CyberFlex** sends the message "CONNECT" on the serial interface and automatically switches to data mode. Along with each serial output of the "RING" character sequence, an incoming connection request causes the interface signal RI (=Pin 9) to be set active for approx. 1s.

**D**

## Dial Command

<i>D</i>	<i>IP address</i>
<i>D</i>	<i>S=n</i>

The dial command is required for establishing the connection to another **CyberFlex**. Instead of the dial-up number used in telephone networks, here the IP address of the desired **CyberFlex** is used. To ensure compatibility with existing modem applications, the **CyberFlex** accepts the two following formats at this point:

### • **ATD + IP Address**

The IP address consists of four numbers between 0 and 255 in decimal format. These IP addresses are separated by decimal point for better identification. If additional digits follow the last number, these are interpreted as TCP port numbers (and are separated from the last number by a colon). If no port number is specified, port number 5000 is implied. Valid entries would be for example:

192.168.232.73 **or** 192.168.232.73:5000

### • **ATD + S=0/1/2/3**

The Cybercomm **CyberFlex** has a non-volatile memory for up to four destination IP addresses. If a value between 0 and 3 is specified, the IP address stored in this location is used for establishing the connection. If simply an "S" is entered without a numerical value, the address stored at Position 0 is used. Write to the non-volatile address memory using the command &Zn. Valid entries would be, for example:

ATDS=1 (Stored IP Address #1 is 192.168.22.14)

ATDS=2 (Stored IP Address #1 is 192.168.22.55)

### **Replies to the dial command:**

#### • **OK [Digit 0]**

The command line executed without error

#### • **CONNECT [1]**

The network connection to the desired destination system was successfully established, and the serial application at that location accepted the call. If the dial command was not terminated with a semicolon, the **CyberFlex** is now in data mode, i.e. all entries are passed along transparently to the communications partner.

#### • **RING [2]**

A server is trying to connect to the **CyberFlex**

# CYBERFLEX MODEM TRANSPORT MODE

## Replies to the dial command - Continued

- **NO CARRIER [3]**

The network connection to the desired communications partner was successfully established, but the serial application did not accept the call.

- **ERROR [4]**

An invalid command was entered, syntax error occur, or error in the command line.

- **BUSY [7]**

No network connection to the desired communications partner could be established. The reason for a failed connection might be the station is already occupied by another connection. In this case the attempt to establish a connection is rejected.



**Note:** It is important that you check and verify that the Baud Rate in the Serial Port Parameters is the same baud rate programmed for the Software and/or Terminal Device that the **CyberFlex** will be communicating with. Another point of clarification, the numbers following the dial command reply that are “[ ]” bracketed, refers to the numeric result code of the reply (see AT Command “Vn” on pg 27).

<b>[En]</b>	Off-Line Command Echo
<b>E0</b>	Disables command echo.
<b>E1</b>	Enables command echo.

This enables or disables the command echo of characters to the DTE. This allows the characters from **CyberFlex** to be displayed on the PC Screen / Monitor.

<b>[Fn]</b>	On-Line Command Echo
<b>F0</b>	Enables command echo.
<b>F1</b>	Disables command echo.

This enables or disables the echo of characters to the DTE according to the parameter supplied. This allows the characters to be displayed from the **CyberFlex** to the Host PC Monitor in the on-line state.

<b>[H]</b>	Disconnect (Hang-Up)
------------	----------------------

This command ends the connection. Both serial partners receive the reply "NO CARRIER".

<b>[In]</b>	Identification
<b>I3</b>	Reports firmware version of the AT Command interpreter

The Identification Command is used to read the **CyberFlex** system information.

<b>[O]</b>	Return from Command Mode to Online State
------------	--

This command returns from command mode to online state when there is an existing connection. If for example parameters for the **CyberFlex** are changed during a connection, you must use the Escape sequence to first return to command mode. After the desired reconfiguration you can then use the ATO command to return to the online state (data mode).

# CYBERFLEX MODEM TRANSPORT MODE

<b>Qn</b>	Quiet Results Codes Control
<b>Q0</b>	Enables result codes to the DTE.
<b>Q1</b>	Disables result codes to the DTE.

This command enables or disables the sending of result codes to the DTE according to the parameter supplied. In other words, the replies generated by the Cybercomm **CyberFlex**, such as 'OK' or 'CONNECT', can be disabled using the Q command.

<b>Vn</b>	Result Code Form
<b>V0</b>	Enables short-form numeric (Decimal) result codes.
<b>V1</b>	Enables long-form (verbose) result codes.

This command selects the sending of short-form or long-form result codes to the DTE. It specifies whether results sent by the **CyberFlex** shall be numeric or verbose. The following messages and codes are possible: **0=OK, 1=CONNECT, 2=RING, 3=NO CARRIER, 4=ERROR, 7=BUSY**

<b>Zn</b>	Soft Reset and Restore Profile
<b>Z0</b>	Soft reset and restores stored in profile 0.
<b>Z1</b>	Soft reset and restores stored profile 1.

The **CyberFlex** modem performs a soft reset and restores (recalls) the configuration profile according to the parameter supplied. If no parameter is specified, zero is assumed. The **Zn** command terminates any active connections and resets the firmware of the **CyberFlex** to the parameters stored in the non-volatile memory. Specifying 0 or 1 allows one of the two available reset profiles to be selected.

## AT& Commands

<b>&amp;Dn</b>	CyberFlex Reaction to DTR On to Off Transition
<b>&amp;D0</b>	The <b>CyberFlex</b> ignore the signal.
<b>&amp;D2</b>	<b>CyberFlex</b> disconnects & assumes command state when DTR is deactivated.

If the **CyberFlex** is in online mode, a transition on the DTR input is only recognized if it is present.

<b>&amp;V</b>	Display Configuration Profiles
<b>&amp;V</b>	This command provides the current configuration profile as well as the configuration data stored in non-volatile profile.

<b>&amp;Zn</b>	Store Telephone Number
<b>&amp;Zn=x</b>	Where n = 0 to 3 and x = dial string (IP Address).

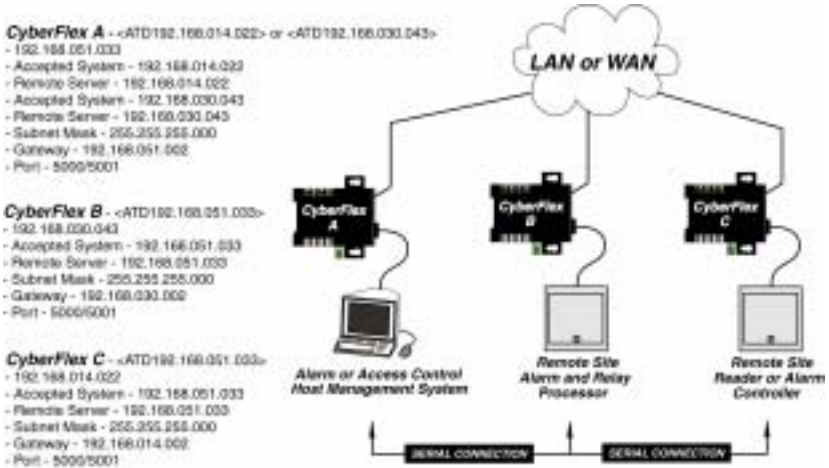
The **CyberFlex** can store up to 4 destination IP addresses in non-volatile memory, which can later be dialed using the speed dial function (**Sn=x**) of the dial command.

**Example: AT&Z1=192.168.72.16** IP address 192.168.72.16 is stored in memory slot number 1. Now the **ATDS=1** command can now be used to establish a connection to this address.

# CYBERFLEX MODEM TRANSPORT MODE

The following is an illustration that highlights an installation example of the **CyberFlex** in modem transport mode:

- 1) **Application:** An older access control management program communicates to a field controller panels with a dialup modem string contained within the program. The field controller panels send data to the control program by using the modem strings contained in the microprocessor of the panels. With **CyberFlex** the strings are utilized to fool the field controller into believing that its still using a modem and phone line but in reality we are making the call over the LAN and/or WAN.



# CYBERFLEX FACTORY DEFAULT MODE


## The Factory Default Mode

To set the **CyberFlex** unit in the factory default mode you must first open the housing. To open the **CyberFlex**, plug a DB9 connector into the serial port. After tightening the two mounting screws on the DB9 plug into the connection bolts, pull on the plug, while holding the housing case, and remove the circuit board from the housing and place the 4-Position Configuration Rocker Switches as listed below:

<b>Rocker Switch Settings</b>	<b>SW1</b>	<b>SW2</b>	<b>SW3</b>	<b>SW4</b>
<b>Load Factory Default Settings</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>	<b>ON</b>

The configuration is then ready to enable its factory default/preset state. When in this setting and completing the reset activity, all data loaded in the **CyberFlex** will be erased.

To complete the factory default reset, and while the switches are set as listed above, you then recycle power to complete the full factory default reload. Once this action has been performed, and the PCB is returned to its housing case, return the RS485 plug and reactivate the unit by reconnecting power. After reactivation, returned to **"CyberFlex Initial Programming"** (pg.7) and follow the instructions to reprogram the **CyberFlex** as required.

 **NOTE:** This serial program reset functions regardless of whether the **CyberFlex** already has an IP address or not and can repeated as many times as needed. Use this method if you don't know the IP address, the Password, or have forgotten them both.

# TROUBLESHOOTING

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## *Symptoms, Possible Causes, and Corrective Actions*

**Problem:** The **CyberFlex** cannot be accessed from a browser.

**Possible Cause:** The IP address of PC Workstation with the Browser has not been added to "Accepted Systems" to provide a pathway through the enabled IP Barrier.

**Possible Cause:** The IP address is already used by another device.

**Corrective Action #1a:** Try to PING the **CyberFlex** and if a response is achieved, close the browser and then reopen the browser and re-access the **CyberFlex**.

**Corrective Action #1b:** Try to PING the **CyberFlex** and if **no** response is achieved, check to make sure the **CyberFlex** is in Transport Mode. After verifying the unit is in the proper mode, and still no connection is made, close the browser, place the **CyberFlex** in configuration mode, and reconnect the serial port, open an HyperTerminal Session, reset AC power and re-enter:

- A) IP Address
- B) Accepted System (Your Computer's IP Address)
- C) Gateway (If your computer is connected by a WAN)
- S) Save Programming to EEPROM

Place the **CyberFlex** in Transport Mode and open the browser and re-access the **CyberFlex**.

**Corrective Action #1c:** Try to PING the **CyberFlex** and if **no** response is achieved, check to make sure the IP address is located in the same subnet, you should then proceed as follows:

1. During the HyperTerminal session, check and make sure that the IP address for your **CyberFlex** is within the same subnet as your PC Workstation:
2. To check the PC Workstation IP Settings Click "Start", "Settings", "Control Panel" and "Network". Specify the TCP/IP adapter and click on "Properties". In Properties, click "IP Address" and Check the Workstation's IP address.
3. Check that the first 3 (Octets) sets numbers in the IP address of your **CyberFlex** match the first 3 of your workstation. If not, your **CyberFlex** may be on a different subnet and the IP address cannot be accessed from this workstation. Please see your network administrator.

**Corrective Action #1d:** Try replacing your network cable. Test the network interface of the product by connecting a local computer to the **CyberFlex** unit, using a standard *Crossover (hub-to-hub) Cable*. If the above actions don't solve the problem, verify if the Power indicator LED is not constantly lit and check power supply. If the error LED is constantly lit, the unit may have a hardware failure. For further assistance, contact your Cybercomm Dealer or DC Security Products at [www.dcsecurityproducts.com](http://www.dcsecurityproducts.com).

**Problem:** Your **CyberFlex** works locally, but not beyond.

**Possible Cause:** Firewall protection or gateway has not been set.

**Corrective Action:** Check the Internet firewall with your system administrator and verify the properly configured gateway settings and test the gateway communication.

**Problem:** Unable create a TCP Connection or "Connection refused" or similar error message.

**Possible Cause:** The IP settings in the **CyberFlex** are wrong.

**Corrective Action:** Re-Check the IP number, Gateway, Subnet, Port settings and verify the TCP Server's IP Address and Port settings were properly entered in the **CyberFlex**.

**Problem:** No serial activity detected from the DB9 port when connected to the serial device.

**Possible Cause:** Incompatible serial cable between the serial device and the **CyberFlex**.

**Corrective Action:** Check the cable's pin position and verify the handshake procedures between the devices (TX to RX and visa-versa, see "CF232100 Wiring Connection" pg 5).

# CYBERFLEX CUSTOMIZED APPLICATIONS

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## Specialized OEM Applications

DC Security Products is dedicated to supplying our valued customers with customized solutions for their serial communication needs. Let our engineers help you develop a network solution that incorporates the CF232100AT OEM PC Board as an embedded communication processor in your device. On the rear of the CF232100AT PCB is a 25 Pin header supplying Serial TTL levels for communication and power. This flexibility provides a strategic answer for your network requirements by using this ready-to-implement Ethernet Solution.

This powerful daughter board is the low investment choice, that will add functionally and value to your product providing added security and immediate communication versatility. We stand ready to serve your network needs and requirements with our OEM Ethernet Transporters. Let us show you our versatility at DC Security Products and demonstrate just how our OEM Program work for you, please reach us through our website at [www.dcsecurityproducts.com](http://www.dcsecurityproducts.com)

## CERTIFICATIONS

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### FCC Part 15

This equipment has been tested and complies with the limits for a Class A computing device according to U.S. Code of Federal Regulations, Title 47, FCC Rules and Regulations Part 15. Operation is subject to the following two conditions: (1) This device may cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

## LIMITED WARRANTY

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**LIMITED WARRANTY AND LIMITATION OF REMEDIES: DC Security Products** warrants that this product is free from defects in material and manufacture at the time of purchase. **If any such defect appears within twelve (12) months from the date of purchase, DC Security Products entire liability is either (a) repair, or (b) replacement of the product with proof of purchase.** This warranty does **NOT** apply to product failure resulting from misuse, abuse, accident, neglect or mishandling, improper adjustment, programming, or maintenance, incorrect environments or wear from ordinary use. **DC SECURITY PRODUCTS SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL LOSS OR DAMAGE (INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF PROFITS, SAVINGS OR DATA) IN ANY WAY RELATED TO THE PRODUCT.**

## TECHNICAL DATA

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<i>Supply Voltage @ 12vdc</i>	<i>Typical 150ma</i>
<i>Environmental</i>	<i>0 – 60C 90% Non-Condensing</i>
<i>Dimensions</i>	<i>105x75x22mm</i>
<i>Weight</i>	<i>15.0g</i>

*“Products designed with SECURITY in mind”*



*Quality Communication Products*

## **COMPANY HEADQUARTERS**

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