Stand-alone uM260 Data Entry – LAN Version, Text Interface

Introduction

There are two versions of the System Studies uM260 monitor: one designed for Ethernet LAN communications, the other designed for dial-up modem communications. The LAN version offers both a telnet text menu interface and an HTML interface, while the modem version offers only telnet text menu access.

This section of the manual describes how to perform data entry for the LAN version of the uM260 using the text menu interface. System Studies Document # 3080213.ASD describes the procedure for the browser interface. Document # 3060213.ASD explains how to perform data entry for a modem version of the uM260 monitor, using the only interface option for that version: text menu interface. These documents are available on the System Studies website (*www.airtlak.com/reference14.html*). Click on *PDF library* and then *Software Documents*.

> When the uM260 is monitored by PressureMAP™ or CopperWATCH™, data entry is performed within the application, and the software then populates the micro monitor's database with the necessary information.

The explanations below include samples of the various menus and prompts that you will encounter during initial communications with the monitor and during data entry. This information not only helps to guide you through initial setup and data entry, it also provides a valuable reference for future system updating. The information in this section also addresses the specific alarm notification requirements that pertain to the LAN version of the monitor.

IP Programming Requirement

In order to perform data entry on a LAN version of the uM260 via the text menu interface, it is first necessary to program the IP address information into the uM260 using the serial cable provided with the shipment. Because this setup function requires a specialized instruction set, it is recommended that the procedure be performed by an authorized network administrator or IT person. Instructions for performing the procedure are described in Section 5 of the *uM260 Installation Manual*.

Once the IP information has been programmed into the LAN version of the uM260, you can proceed with the setup and data entry procedures described in the following pages.

Logging On

The actual procedures required to log onto the uM260 depend upon the communications utility that you are using. If you are unfamiliar with the software available on your personal computer, please contact your IT personnel for support. System Studies' explanation of uM260 system setup and data entry begins at the login prompt.

Procedure:

1) Access the uM260 using the IP address designated by your IT representative. Once you have logged on to the system, you should see a basic password screen similar to the one below.

```
Password ######## >
```

Screen 1: Login

Password Entry

Access to the uM260 Micro Monitor is permitted using either a *User Password* or an *Edit Password*. Initially, the uM260's default User Password is *airtalk1*; the Edit Password is *airtalk2*. Since the data entry and setup procedures described in this section of the manual require an Edit Password, it is recommended that you use the *airtalk2* login initially. Please note that both passwords can be changed at any time, if desired, from the Setup Mode via the *Change User Password* command described in the procedures below.

2) Enter your password followed by ***<Enter>*** to log onto the system and access the Main Menu (Screen 2). If you type the password incorrectly, the screen will display a zero (0) on the Password prompt line. Simply retype the correct password followed by ***<Enter>***, and the Main Menu will display as shown below.

```
************************************************************
Monitor: uM260 Modem                          Version:  1.07
Name:                                Elevation: 00000

  MAIN MENU

  1 Readings
  2 System settings
  3 Device settings

  Q Quit

  Choice>
```

Screen 2: Main Menu

Defining System Settings

After logging into the system, the first data entry procedure is to define *System Settings* (option 2 above), as described in the following steps. Access to this part of the uM260 editor and to *Device Settings* (option 3) requires an *Edit Password*.

The System Menu for the LAN version of the uM260 Micro Monitor provides selection options for the following functions:

System Menu Options

- **Set User Password**—Enables you to change the default User Password login for the system.
- **Set Edit Password**—Allows you to change the default Edit Password for the system.
- **Set Name**—Used to define the name of the uM260 installation (typically the name of the office or Controlled Environmental Vault in which the monitor is installed).
- **Enter Elevation**—Allows you to designate the elevation of the uM260 installation location. This information is used to zero-correct any High Resolution Pressure Transducers (4–20 mA devices) that are used in the system.
- **Alarm Center**—Provides options for setting up the uM260's alarm notification function (IP address, port number, etc.). Please note that the LAN version of the uM260 accommodates one Alarm Center which, in stand-alone applications, can be any designated personal computer on the network. In applications where the uM260 Micro Monitor will be monitored by the MAP system, however, PressureMAP's Alarm Receiver must be designated as the uM260 Alarm Center.
- **Alarm Email**—Used to configure email functionality for the monitor. The LAN version of the monitor offers up to three email notification addresses.
- **Send Test Alarm**—Provides the ability to send a test alarm to confirm proper Alarm Center / Alarm Email setup.
- **Alarm Status**—Provides a numeric code which represents a specific alarm/alert condition or delivery failure notice. Please note that uM260 Alarm Status information pertains only to the text menu interface.

Procedure:

Accessing the System Menu

1) From the Main Menu select option ***2***, *System Settings*, followed by the ***<Enter>*** key.

   Note: If you entered an Edit Password to log onto the uM260, the System Menu (Screen 3) will be displayed immediately after you press ***2*** and ***<Enter>***. However, if you entered a User Password initially, the following password prompt will display:

```
Password ######## >
```

2) At this prompt type the *Setup Password* and press **<*Enter*>**.

```
**********************************************************
Monitor: uM260 LAN                          Version:  1.07
Name:                              Elevation: 00000
 SYSTEM MENU
 1 Set User Password
 2 Set Edit Password
 3 Set Name
 4 Enter Elevation
 5 Alarm Center
 6 Alarm Email
 7 Send Test Alarm
 8 Alarm Status
 Q Quit
 Choice>
```

Screen 3: System Menu

Changing Passwords

Follow the procedures below for changing either of the default passwords assigned to the uM260 monitor. Make sure to record any password changes, and store the information in a safe and retrievable location. You will need to use the new password(s) the next time you log in.

Procedure:

1) To change the User Password, select option ***1***, *Set User Password*, followed by **<*Enter*>**. The following screen displays:

```
Enter New User Password (********) >
```

2) Type the desired password followed by **<*Enter*>**. The password can be any alphanumeric entry of eight characters or less, as indicated. Notice that your typed entry does not echo to the screen, and there is no visual indication (such as a series of xxxx's) to show the number of characters entered.

   The menu displays the following prompt:

```
Confirm New User Password >
```

3) Carefully retype the desired password and press **<*Enter*>**. If the two entries match, the following message is displayed:

```
Password accepted (hit enter to continue) >
```

If the entries do not match, you will see:

```
Password failed (hit enter to continue) >
```

4) Press ***<Enter>*** to return to the System Menu (Screen 3), where you can select other options to perform or initiate another password change.

5) Follow the same procedure, as described above, for option 2 to change or reset the *Edit Password* if desired.

Setting System Name

The next procedure to perform when setting up the uM260 for operation is to set the *Name* of the system, which typically is used to identify the office or enclosure where the system is installed.

Procedure:

1) From the System Menu, selection option ***3***, *Set Name*, followed by ***<Enter>***. The following prompt displays at the bottom of the screen:

```
Enter System Name ( ) >
```

2) Type the desired system name, using a combination of alpha and numerical characters, if desired. Please note that only twenty characters (including spaces) are allowed. Press ***<Enter>*** to complete the entry. At this point the screen displays your entry and allows you to save or discard it.

```
NAME:Creekside
Save Name y Yes n No? (n) >
```

3) If you have entered the desired name for the uM260 monitor, press ***y*** followed by ***<Enter>***. Otherwise, press <*Enter*> to return to the System Menu where you can begin the process over. (Please note that the default value for the uM260 text editor for a *Save* prompt is *no*. This is represented by the letter "n" located inside the parentheses, as seen in the example above.)

   When you have completed entering the system name, the System Menu refreshes immediately and displays the new *Name* on the second text line at the top of the screen, as shown in Screen 4 on the next page:

```
**********************************************************
Monitor: uM260 LAN                          Version:  1.07
Name:   Creekside                 Elevation: 00000
 SYSTEM MENU
 1 Set User Password
 2 Set Edit Password
 3 Set Name
 4 Enter Elevation
 5 Alarm Center
 6 Alarm Email
 7 Send Test Alarm
 8 Alarm Status
 Q Quit
 Choice>
```

Screen 4: Name Selection

Data Entry Editing Information

Note: When setting up and/or editing the uM260 database, you will be prompted at various times to make an entry. A set of parentheses is provided at the end of the prompt or save request. Initially, there is nothing inside the parentheses. But if data entry has been performed, the parentheses will contain the active value that was previously entered, even if blank spaces were entered. If you press ***<Enter>*** at the prompt, the existing entry or value will not change. If you wish to change an existing entry, simply type the desired new information and confirm your selection at the *Save* prompt.

For example, if you wish to change the uM260 Name that was entered above, press 3 followed by ***<Enter>.*** At the "Enter System Name" prompt, type the desired new name, check your entry for accuracy, and press ***<Enter>***. The new name will display on the screen. If you wish to save it, press ***y*** and ***<Enter>*** at the prompt. The screen output for this example would be similar to what is shown below:

```
Choice> 3
3

Enter System Name (CREEKSIDE) > Your New Name
Your New Name

NAME:  Your New Name

Save Name y Yes n No? (n) > y
```

Please note that this same convention is used throughout the data entry process. You must actively type an entry or press ***<Enter>*** to accept the existing one. The default value for the *Save* prompt is *no*. To save an entry you must type *y* and press ***<Enter>***.

Entering the Elevation

As mentioned above, if you are using System Studies' 4–20 mA High Resolution Pressure Transducers with the uM260, it is necessary to enter the approximate elevation of the location where the monitor will be installed. This value is used to offset the 4–20 mA pressure transducer readings.

Elevation Requirement Explanation

Note: The offset is required because the 4–20 mA pressure devices are zero calibrated at sea level relative to a perfect vacuum. The result is a device with a highly accurate fixed reading scale and a true zero setting of 14.7 Pounds per Square Inch Absolute (PSIA), or one atmosphere. When these pressure devices are installed at higher altitudes, there is less pressure exerted on the internal sensor, which results in a correspondingly lower reading. The *Elevation* footage entered provides an offset for the lower barometric pressure.

It is recommended that you enter the elevation at this time even if you do not use High Resolution Transducers. Doing so will eliminate having to return to this screen if you decide to install the 4–20 mA devices at a later date.

Procedure:

1) From the System Menu, select option ***4***, *Enter Elevation*, followed by **<*Enter*>**. The following prompt displays at the bottom of the screen:

```
Enter Elevation in feet ( ) >
```

2) Enter the approximate elevation of the location where the uM260 monitor will be installed. Please note that a maximum of five digits is allowed. Complete your entry by pressing the **<*Enter*>** key. The program then displays your entry:

```
ELEVATION: 672

Save Elevation y Yes n No? (n) >
```

3) Assuming that the desired elevation has been entered correctly, press ***y*** and **<*Enter*>**. At this point the System Menu redisplays, showing the new *Elevation* data on the second text line at the top of the menu (as shown below).

```
************************************************************
Monitor: uM260 LAN                          Version:  1.07
Name:    Creekside                 Elevation: 672
 SYSTEM MENU
 1 Set User Password
 2 Set Edit Password
 3 Set Name
 4 Enter Elevation
 5 Alarm Center
 6 Alarm Email
 7 Send Test Alarm
 8 Alarm Status
 Q Quit

 Choice>
```

Screen 5: Elevation Display

Defining the Alarm Center

With the *Office Name* and *Elevation* already established in the database, the next step is to set up the communications parameters for the Alarm Center. As stated previously, the LAN version of the uM260 Monitor allows for one Alarm Center and three email notification addresses. The Modem version can report to two Alarm Centers, each with a dedicated printer or designated pager.

These LAN version setup procedures involve defining the IP and Port designations for the desired Alarm Center computer (or network Alarm Server). Once the Alarm Center has been defined, as explained below, you will need to specify the email server IP address and port number, plus the email addresses of those who will receive alarm notification.

Note: It is recommended that you test the IP address independently to make sure it is valid before entering the number with the uM260 Alarm Center. An invalid IP address will cause the system to hang until the connection attempt times out. This will prevent you from getting back in to the System Menu easily to make changes or perform additional data entry.

Procedure:

1) Select option ***5***, *Alarm Center*, from the Setup Menu, followed by **<*Enter*>**. The software will display the following prompt:

```
Enter Alarm Center IP ( ) >
```

Alarm Center IP Address

2) Type the IP address of the PC or PressureMAP Alarm Receiver designated for the Alarm Center followed by ***<Enter>***. This information can generally be obtained from your IT personnel or designated network administrator.

   After you have entered the assigned IP address, the software asks you to confirm and save the address if it is correct. A prompt similar to the one below will display:

   ```
   10.1.0.168

   IP: 10.1.0.168 Save IP address y Yes n No? (n) >
   ```

3) Make sure that the IP address you entered is correct. If it is not, press ***<Enter>***. At the *Port:* prompt press ***<Enter>*** again, and the System Menu will redisplay. Then type ***5*** and ***<Enter>*** to redisplay the *Enter Alarm Center IP* prompt. Retype the correct IP address, confirm its accuracy, and press ***y*** and ***<Enter>***.

   The software now displays the following prompt:

   ```
   Enter Alarm Center Port ( ) >
   ```

4) Type the designated port number of the Alarm Center computer that is used for communications with the uM260 monitor. Once again, this information can be obtained from the network administrator or IP department personnel. After typing the number and pressing ***<Enter>***, the software displays a message similar to the one below. It includes the port number that you entered and a prompt asking if you wish to save your entry :

   ```
   3008

   PORT: 3008  Save Port number y Yes n No? (n) >
   ```

5) If the port designation that you entered is correct, type ***y*** and ***<Enter>***. If it is incorrect, press ***<Enter>***. The System Menu will redisplay, and you can select option 5 to re-enter the correct information.

The screen below illustrates how the System Menu looks during this editing process:

```
************************************************************
Monitor: uM260 LAN                          Version:  1.07
Name:   Creekside                 Elevation: 672
 SYSTEM MENU
 1 Set User Password
 2 Set Edit Password
 3 Set Name
 4 Enter Elevation
 5 Alarm Center
 6 Alarm Email
 7 Send Test Alarm
 8 Alarm Status
 Q Quit
 Choice> 5
5
 Enter Alarm Center IP ( ) > 10.1.0.168
10.1.0.168
 IP:  10.1.0.168  Save IP address y Yes n No? (n) > y
y

 Enter Alarm Center Port ( ) > 3008
3008
 PORT:  3008  Save Port number y Yes n No? (n) > y
y
```

Screen 6: Alarm Center Information

Setting Up Email Information

The last system setup procedures required before entering monitoring device information are to specify the mail server's IP addresses and port, and to set up the mail recipients.

Procedure:

Mail Server IP Address

1) Select option ***6***, *Alarm Email*, from the Setup Menu, followed by ***<Enter>***. The program displays the following prompt:

   Enter Mail Server IP ( ) >

2) Enter the IP address of your designated mail server followed by the ***<Enter>*** key.

The screen displays your entry and requests that you save the IP address, as in the example below:

```
10.4.3.70
IP: 10.4.3.70 Save IP address y Yes n No? (n) >
```

3) Double check the IP address entry to confirm its accuracy. If it is correct, type ***y*** and press **<*Enter*>**. If it is incorrect, you can press **<*Enter*>** repeatedly until you arrive back at the System Menu, where you can select option ***6*** and begin the process again. After you have successfully entered the IP address and saved it, the screen prompts you to enter the port number designated for the mail server.

```
Port: Enter Port number ( ) >
```

Mail Server Port Designation

4) Type the assigned port number and press **<*Enter*>**. (In many cases the designated default email server port designation is 25.) Once again the software will prompt you to save the port designation.

```
25
Port: 25  Save Port number y Yes n No? (n) >
```

5) After you have confirmed that the port number is correct, press ***y*** and **<*Enter*>**.

The software will display your *y* (yes) entry and prompt you for the mail domain name, as shown below:

```
y

Enter Mail Domain ( ) >
```

Mail Server Domain Name

6) Type the domain name assigned to your mail server followed by **<*Enter*>**. A typical entry may look like the one displayed below:

```
yourcompany.com
Mail Domain: yourcompany.com Save y Yes n No? (n) >
```

7) If the entry is correct, type ***y*** and **<*Enter*>**.

Next, the screen displays a prompt (shown below), that requires you to identify the source of the email alarm, including the mail server domain name that you just entered. From this prompt, you can indicate which monitor is sending the alarm, as follows:

```
From ( ) >
From: uM260@yourcompany.com Save y Yes n No? (n) >
```

8) If the source email address that you have entered is correct, type ***y*** and ***<Enter>***. An incorrect entry can be changed by pressing ***n*** and ***<Enter>*** and then pressing ***<Enter>*** repeatedly to return to the System Menu where you can begin the process again.

   Once the correct email sever name and domain have been entered and saved, you can designated up to three email addresses for alarm distribution. The process begins at the next prompt displayed on the screen:

```
To #1 ( )  >
```

Designating Email Addresses

9) Type the desired email address of the individual whom you want to receive the alarm notification first followed by ***<Enter>***. Your entry will display on the screen. Like the other entries, the software prompts you to save and disregard the email address you have entered:

```
me@yourcompany.com
TO (1): me@yourcompany.com Save y Yes n No? (n) >
```

   After you have confirmed that the address is correct, type ***y*** and ***<Enter>***. This same process is required for each of the three possible email recipients. At the end of this data entry function, the System Menu will display all of the email information you have entered for the monitor. The screen will look similar to Screen 7 on the following page.

```
 SYSTEM MENU

 1 Set User Password
 2 Set Edit Password
 3 Set Name
 4 Enter Elevation
 5 Alarm Center
 6 Alarm Email
 7 Send Test Alarm
 8 Alarm Status
 Q Quit

 Choice> 6

6

 Enter Mail Server IP (10.1.0.66) >


 Enter Mail Server Port (25) >


 Enter Mail Domain (yourcompany.com) >


  From (uM260@yourcompany.com) >

  To #1 ( ) > joe@telco.com

joe@telco.com

 TO (1):  joe@telco.com  Save y Yes n No? (n) > y

y

  To #2 ( ) > jim@telco.com

jim@telco.com

 TO (2):  jim@telco.com  Save y Yes n No? (n) > y

y

  To #3 ( ) > john@telco.com

john@telco.com

 TO (3):  john@telco.com  Save y Yes n No? (n) > y

y
```

Screen 7: Alarm Email Information

When you have finished setting up the Alarm Center phone numbers and baud rates, you can manually send a test alarm to both alarm centers as described below.

Sending a Test Alarm

Confirm Alarm Center Connection

Once the *Alarm Center* and *Alarm Email* addresses have been defined, the next step is to send a test alarm to confirm that the proper communications have been established. Please note that this option is available only from the text menu interface to the uM260 Micro Monitor (applies to both the modem and LAN connection text menu interfaces). It is not available using the web browser interface.

Procedure:

1) Select option **7**, *Test Alarm Center*, from the Setup Menu, followed by ***<Enter>***. The test alarm will be delivered in the following format to the defined center and to the email recipients:

```
UM260x
Name5678901234567890
TEST SSI_UM260_TEST_ALARM TEST
```

Note: The information above does not display on the uM260 text menu screen. It represents the alarm format that will be sent to the Alarm Center.

2) Log out of the System Menu by entering ***Q***, *Quit*, and ***<Enter>***. At this point the Main Menu (Screen 2) will display.

3) The final step is to manually confirm that the Alarm Center email recipients have received the test alarm.

Alarm Formats

The uM260 generates both individual and multiple alarms, as necessary. Like the test alarm example shown above, each alarm is comprised of a minimum of three lines of information: 1) monitor type—either UM260M (for a modem version) or UM260L (LAN Version); 2) monitor location (typically an office name or office location); and 3) alarm summary information. The alarm summary includes the number and location of the alarmed device, plus a reading which represents a pressure drop or flow increase across a defined threshold, or a verbose contact alarm reading (ALARM , SHORT, etc.). The examples below represent the types of alarms that are generated by the uM260 monitor.

```
UM260L
SW260
 2-10  location of dev 2-10   43.4

UM260M
SW260
 2-3   location of dev 2-3   SHORT
 2-4   location of dev 2-4    38.0
 2-11  location of dev 2-11    2.7
 1-3   location of dev 1-3   ALARM
 1-4   location of dev 1-4   ALARM
```

Alarm/Alert Delivery Status

Alarm/Alert Distinction

The final System Menu option, *Alarm Status*, gives you the ability to deterime the status of a particular alarm or alert. For reference, the distinction between an alarm and an alert pertains to how the uM260 is being used. As a standalone monitor, when a device reading crosses a programmed alarm threshold, the uM260 issues and distributes an *alarm*. If PressureMAP is used to monitor the uM260 office, all alarms generated by the monitor and sent to PressureMAP are considered initially to be

alerts. PressureMAP then applies its alarming criteria, based on user-defined alert sensitivity settings, and issues an alarm, if applicable.

When you select the *Alarm Status* option, the uM260 provides a status message similar to the following:

```
Alarm Delivery Status

  Alarm Center 1: 0, 0 attempts
  Alarm Center 2: 23, 5 attempts
    SMTP: 553 5.5.4 <um260>... Domain name required
    for sender address um260
```

The first numeric value after the Alarm Center designation represents one of several possible alarm/alert conditions (see list below). Obviously, the second numeric value indicates how many delivery attempts were made by the uM260 monitor.

0 - no events have occurred
1 - successful delivery
2 - alarm delivery pending (user logged in)
10 - connection attempt failed
11 - unexpected response
20 - SMTP startup error
21 - SMTP RSET command error
22 - SMTP HELO command error
23 - SMTP MAIL command error
24 - SMTP RCPT command error (dest 1)
25 - SMTP RCPT command error (dest 2)
26 - SMTP RCPT command error (dest 3)
27 - SMTP DATA command error
28 - SMTP message body error

Note: SMTP errors (items 20 - 28) will also indicate the specific failure that was sent from the mail server, as shown in the Alarm Delivery Status example shown above.

Defining Device Settings

The next step in setting up the uM260 monitor is to build the device database, which is a simple process for identifying the four possible binary devices, the sixteen possible resistive and/or loop current transducers, and the single control relay. *Please note that programming device data into the uM260 (performing the actual data entry function described below) is not required if you intend to have the uM260 monitored by PressureMAP. For these applications, it is necessary only to program the office and device data into PressureMAP, and PressureMAP will then populate the uM260 database with the required information*.

Data Entry Form

If you are going to program the uM260 for stand-alone operation, it is recommended that you first compile and organize the device data needed for the process. On the last page of this document is a Data Entry Form that can be photocopied and used for this purpose. Example 1 shows a completed version as a sample. The document helps you to organize monitoring device data, assign access (device) numbers, record device locations and specify alarm thresholds.

Data Entry Form Column Explanations

As you can see on the completed form sample on the following page, only four types of data are required for each device programmed into the uM260 monitor:

- **Device Number** (referred to as Access Number in the data entry editor)
  As stated previously in this manual, there are three Device Number or Access Number categories that are used for the uM260 Micro Monitor: numbers 1-1 to 1-4 are reserved for the four possible binary devices; numbers 2-1 to 2-16 are used for resistive and loop current transducers; and number 3-1 designates the control relay device. Notice when filling out the uM260 Data Entry Form that the binary contacts are listed first (rows 1 to 4), followed by the sixteen possible transducers (rows 5 to 20). The last row on the form is used to record the control relay information.

- **Device Location**
  This 18-character field is used to identify where the device is installed in the system (e.g. manhole designation and street address, pole number, central office equipment designation, etc.)

- **Device Type** (designates both the type and function of the monitoring device)
  Table 1 on the page 18 lists 28 possible device types that can be programmed into the uM260 monitor, as well as the output range or function of each. The last three functions on the table (mA, kohm and Uninstall) can be used to generate test data or remove an assigned device type.

  Please note that the device types on this table do not pertain to the four binary contact alarms (Devices 1-1 through 1-4) that can be programmed into the uM260. The pre-designated, default Device Type for these binary contacts is ***CPAMS TD***.

  Please refer to Table 1 when completing the uM260 Data Entry Form.

- **Alarm Threshold** (identifies the point at which a device goes into alarm)
  Binary devices provide an *OPEN* or *CLOSED* condition that is determined by the Device Type assigned. Resistive and current loop transducers need to be programmed by the user to generate an alarm. For a flow transducer, an alarm will be generated when the monitored flow rate increases above the set threshold value; a pressure transducer alarms when monitored pressure drops below the established threshold.

uM260 Micro Monitor Data Entry

Office: ANYONE Date: 5/14/07

	Device	Location (18 characters maximum)	Device Type (9 characters maximum)	Alarm Threshold (4 max.)
BINARY CONTACTS	1-1	DRYER 1-MAJOR	CPAMS TD	OPEN
	1-2	DRYER 1-MINOR	CPAMS TD	OPEN
	1-3	DRYER 2-MAJOR	CPAMS TD	OPEN
	1-4	DRYER 2-MINOR	CPAMS TD	OPEN
TRANSDUCERS	2-1	PPANEL	CF/47.5	26.0
	2-2	DIST.PANEL	CF/19.0	15.0
	2-3	MH_6	CPA30	5.0
	2-4	MH_9	CPA30	5.0
	2-5	MH_9	CPA30	5.0
	2-6	MH_9	CPA30	5.0
	2-7	MH_17	CF/9.5	6.0
	2-8	MH_19	CPA30	5.0
	2-9	MH_19	CPA30	5.0
	2-10	MH_27	CPA30	3.0
	2-11	MH_31	CF/9.5	6.0
	2-12	MH_31	CPA30	7.5
	2-13			
	2-14			
	2-15			
	2-16			
CONTROL RELAY	3-1			

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Example 1: Completed Data Entry Form

Once the uM260 Data Entry Form has been completed and checked for accuracy, you can proceed to build the uM260 database as described in the following pages.

uM260 Micro Monitor Device Types	
Device Type	**Output Range**
CF/9.5	Current Flow TD: 0-9.5 SCFH
CF/19.0	Current Flow TD: 0-19 SCFH
CF/47.5	Current Flow TD: 0-47.5 SCFH
CF/95	Current Flow TD: 0-95 SCFH
CF/190	Current Flow TD: 0-190 SCFH
CF/475	Current Flow TD: 0-475 SCFH
CF/950	Current Flow TD: 0-950 SCFH
RF/9.5	Resistive Flow TD: 0-9.5 SCFH
RF/19	Resistive Flow TD: 0-19 SCFH
RF/47.5	Resistive Flow TD: 0-47.5 SCFH
RF/95	Resistive Flow TD: 0-95 SCFH
RF/190	Resistive Flow TD: 0-190 SCFH
RF/20	Resistive Flow TD: 0-20 SCFH
RF/50	Resistive Flow TD: 0-50 SCFH
RF/100	Resistive Flow TD: 0-100 SCFH
RF/200	Resistive Flow TD: 0-200 SCFH
Baro	Barometric Pressure Transducer–range 20.6 to 91.1 inches of Hg
CPA 30	Current Pressure: 0-30 PSI
RP(9.5)	Resistive Pressure: 0-9.5 PSI
RP/HP-PSI	Resistive Pressure: 5-14.5 PSI
540/270	Contact Alarm (540 / 270K ohms)
AC/115	Contact Alarm for measuring 115VAC– 540K ohms reading: OK; 270K ohms: Alarm
DRYER	Contact Alarm for measuring 115VAC– 540K ohms reading: OK; 270K ohms: Alarm (same as AC/115)
RR/540K	Contact Alarm. 540K ohms: OK; short reading: Alarm
CL/THEFT	Contact Alarm. Current (4-22mA) cable theft monitoring device
TANK_PCT	Current pressure: 0-3000 PSI. Used to report the percentage of capacity remaining in a nitrogen tank
mA	Generates reading in milliamperes
kohm	Generates resistance reading
Uninstall	Removes previously assigned Device Type entry

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Table 1: uM260 Device Types

Accessing the Device Menu

In order to enter device information into the uM260 database, you will first need to return to the Main Menu (Screen 2). Depending upon whether you are accessing the software from an initial login prompt or after having performed system editing as described previously, you may or may not have to enter the Edit Password. The instruc-

tions below assume that you have been working most recently at the System Menu (Screen 3).

Procedure:

1) From the System Menu, simply type ***Q*** and ***<Enter>*** to return to the Main Menu. If you are starting a new data entry session and logging into the system, you will need to enter the Edit Password as described near the beginning of this section.

2) When you have accessed the Main Menu (Screen 2), select option ***3***, *Device Settings*, followed by ***<Enter>***. This produces the Device Menu (Screen 8) shown below.

```
**********************************************************
Monitor: uM260 Modem                          Version:  1.07
Name:  Creekside                Elevation: 672
 DEVICE MENU
 1 Enter Location
 2 Enter Device Type
 3 Set Alarm Threshold
 4 Zero CF TD
 5 CLOSE 3-1
 6 OPEN 3-1
 7 Tie 3-1
 Q Quit

 Choice>
```

Screen 8: Device Menu

Make sure, before you proceed, that you have access to the completed uM260 Data Entry Form.

Entering Access Number and Location

The device data entry process begins with option 1, *Enter Location*, which generates a prompt requesting that you enter the Access Number for the monitoring device. Once the Access Number has been defined, the next two or three Device Menu selections apply to that specific number.

Procedure:

1) To specify the location of a particular device (manhole designation, central office panel number, etc.) in the uM260 database, select option ***1***, *Enter Location*, followed by <***Enter>.*** The following prompt displays:

```
Enter Access # (i.e. 2-3) >
```

2) The number 2-3 displayed in the prompt is an example of the Access Number format required. Type the *Access Number* of the first device that you would like to enter into the database. For reference, please refer to the Device Record or other documentation that was prepared for the installation. The following *Access Numbers* are available for use with the uM260:

Access Numbers

- Binary Devices: 1-1 to 1-4
- Transducers (resistive and/or current loop): 2-1 to 2-16
- Control Relay: 3-1

Note: Make sure that the Access Number information you intend to enter corresponds to the pin designations where the device pairs are wired.

After you have typed the *Access Number* followed by ***<Enter>,*** a prompt displays the number you entered, followed by a request for a *Location* entry.

```
Enter Access # (i.e. 2-3) > 2-4
2-4
Enter Location ( ) >
```

Enter a Location

3) Type the location designation for the device that you have recorded on the uM260 Device Data Form. The uM260 editor allows 20 characters for inputing location information. Please note that this is the only address information that will be recorded and displayed for a particular device. Once you have typed the *Location* information (such as MH_9 below), a prompt asks if you would like to save the information:

```
MH_9
2-4    New Location:  MH_9
Save Location y Yes n No? (n) >
```

4) If the information you have entered is incorrect, press ***<Enter>***. The software returns to the Device Menu (Screen 8), where you can begin the process again by selecting option ***1***. If you are satisfied with the *Location* information entered, type ***y*** and ***<Enter>*** at the prompt.

Entering the Device Type

The next step in the device data entry process is to specify the *Device Type*, which is an alphanumeric designation that represents the type of device and/or its specific function in the cable pressurization system. Once again, this information should be available on the uM260 Data Entry Form that was completed prior to performing these procedures.

Procedure:

1) Select item ***2***, *Enter Device Type*, from the Device Menu followed by ***<Enter>***.

```
Enter Access # (i.e. 2-3) >
```

Device Type Possibilities

2) Type the access number of the device, and press ***<Enter>***. The Select Device Type Menu displays, as shown below. Please note that these device types pertain only to the uM260's non-binary monitoring devices (those designated by Device Numbers 2-1 to 2-16).

```
Select device type
1 CF/9.5            a RF/47.5      j RP(9.5)        x mA
2 CF/19.0           b RF/95        k RP/HP-PSI      y kohm
3 CF/47.5           c RF/190       l 540/270        u Uninstall
4 CF/95             d RF/20.0      m AC/115
5 CF/190            e RF/50        n DRYER
6 CF/475            f RF/100       o RR/540K
7 CF/950            g RF/200       p RL/THEFT
8 RF/9.5            h Baro         q CL/THEFT
9 RF/19.0           i CPA/30       r TANK_PCT
Q Quit

  Choice ( ------- ) >
```

Screen 9: Select Device Type Menu

3) Enter the number or letter which designates the type of device being entered. The menu options are defined in Table 6-1 on page 6-16.

After you select the appropriate device type, the software returns you to the Device Menu (Screen 8) where you can enter Device Types for other Access Numbers that you have entered, or select another menu option.

Setting the Alarm Threshold

Thresholds Defined

With Access Number, Location and Device Type defined for a device, you can now specify the Alarm Threshold for the device. Binary devices provide an *OPEN* or *CLOSED* condition that is determined by the Device Type assigned. Resistive and current loop transducers need to be programmed by the user to generate an alarm. For a flow transducer, an alarm will be generated when the monitored flow rate increases above the set threshold value. A pressure transducer alarms when monitored pressure drops below the designated threshold.

Other special-application device types will require you to enter a threshold value, as well. For example, when programming a transducer that monitors the percentage of capacity remaining in a nitrogen tank (device type, TANK_PCT), you will need to enter a percentage value between 0% and 100% for the alarm threshold. If you set 80.0 as the threshold

Procedure:

1) From the Device Menu, press option ***3***, *Set Alarm Threshold*, followed by ***<Enter>***. The software displays the *Access #* prompt:

```
Enter Access # (i.e. 2-3) >
```

2) Type the Access Number of the device and press ***<Enter>***. On-screen information would look similar to what is presented below:

```
Enter Access # (i.e. 2-3)  2-5

Device  Type      Reading   Threshold
2-5    CPA/30     6.8 PSI      --

Enter Alarm Threshold >
```

3) Notice in the example above that the *Device* (2-5), *Device Type* (CPA/30) and *Reading* (6.8 PSI) are displayed on screen. Type the desired threshold value for the transducer followed by ***<Enter>***, and the software returns you to the Device Menu (Screen 8) where you can continue entering device data.

4) Complete the data entry requirement for the remaining devices that will be monitored by the uM260 by repeating the procedures described in the sections above. Once all the binary devices and transducers have been programmed, you can perform Device Menu options 4 through 7 as described below.

Flow Transducer Zero Calibration

Zeroing 4-20mA Flow Transducers

The fourth option on the Device Menu provides a capability for setting the zero calibration on the System Studies High Resolution Flow Transducers. It does not pertain to any of the other devices that are monitored by the uM260. Although all of the 4–20mA flow transducers are zero-calibrated in the factory, the uM260's manual zero calibration capability is a final step in assuring that the devices will provide the most accurate readings possible, particularly if the installed flow transducers measure very low flow rates.

Zeroing Requirement

Note: Before you can use the uM260's zero calibration function, the High Resolution Flow Transducers must be installed in the field and wired to the uM260. ***Most importantly, there can be no air flow affecting the transducer during the calibration process (air flow needs to be routed away from the Flow Finder that is pneumatically connected to the transducer, or the transducer itself needs to be disconnect from the air feed)***. If necessary, please contact the System Studies Technical Support Department with any questions prior to performing zero calibration on the 4–20mA flow transducers.

Procedure:

1) To zero calibrate a 4–20mA flow transducer, select option ***4*** from the Device Menu and press ***<Enter>***. The following prompt displays:

```
Enter Access # (i.e. 2-3) >
```

2) Type the *Access Number* of the 4–20mA flow transducer that you wish to zero calibrate followed by ***<Enter>***. The infor-mation below displays, first showing your selected Access Number:

```
Enter Access # (i.e. 2-3)  2-1 >

Set Transducer to zero flow condition.
When flow is zero press Z to zero or C to cancel.
```

3) When you are sure that flow has been turned off to the device, type ***Z*** and ***<Enter>*** to perform the zero calibration operation. If you decide not to calibrate the device, press ***C*** and ***<Enter>***. Both keyboard entries will return you to the Device Menu where you can zero-calibrate other 4–20mA flow transducers or perform additional editing functions.

Setting the Control Relay

Function Description

The uM260 offers direct activation of a single control relay via the Device Menu. The control relay has a pre-defined Access Number of 3-1. Option *5*, *Close 3-1*, is used to turn ON or activate a device; option *6*, *Open 3-1*, turns the device OFF.

In order for these two manual control functions to work, the control relay cannot be tied to any of the other monitoring devices (see explanation in the following subsection). The term, *Tied*, refers to the process of automatically activating a contact control function, such as opening or closing a switch, when another specified device (the one that the control relay is tied to) goes into alarm. For example, you could tie a control relay (Access #3-1) at a remote air dryer to a cable pressure transducer. If pressure in the cable were to drop below the threshold defined for the device, the relay would close and switch the dryer ON to provide the necessary air pressure protection.

When initially performing data entry for the uM260, Access #3-1 is not tied to any of the other monitored devices in the system. However, before using options 5 or 6 after the system has been in use for a while, it is a good idea first to generate Device Readings from the Main Menu (Screen 2) to see if Access #3-1 is tied to a device. If it is, the Access Number of the tied device will display in the *Threshold* column for Access #3-1. The subsection on the next page explains how to tie and untie the control relay device.

What follows below is an explanation of how to manually activate and deactivate the uM260's control relay:

Procedure:

Activating the Control Relay Remotely

1) To manually activate or turn ON the device, select option ***5***, *Close 3-1*, from the Device Menu, followed by ***<Enter>***. The software performs the function without providing on-screen confirmation, and then it redisplays the Device Menu.

2) Select Option ***6***, *Open 3-1*, and ***<Enter>*** to perform the opposite function: to turn the control relay OFF. Once again, the software will redisplay the Device Menu where you can choose to perform other data entry functions or enter ***Q*** to return to the System Menu.

Generating a Device Listing

To provide confirmation that you have set the control relay to the desired value, you can generate a listing of devices by selecting option ***1***, *Readings*, from the Main Menu (Screen 2). You should see a display of data similar to the one below that includes the information that you have entered for your system.

```
Device   Location      Type          Thresh.    Reading     Last
-------------------------------------------------------------

1-1      DRYER1-MAJOR  CPAMS TD      OPEN       ALARM      ALARM
1-2      DRYER1-MINOR  CPAMS TD      OPEN       ALARM      ALARM
1-3      DRYER2-MAJOR  CPAMS TD      OPEN       ALARM      ALARM
1-4      DRYER2-MINOR  CPAMS TD      OPEN       ALARM      ALARM
2-1      PPanel        CF/47.5       26.0       16.5        16.0
2-2      Dist. Panel   CF/19.0       15.0       8.2          8.6
2-3      MH_6          CPA30         5.0        6.1          6.1
2-4      MH_9          CPA30         5.0        6.5          6.5
2-5      MH_9          CPA30         5.0        5.9          5.8
2-6      MH_9          CPA30         5.0        5.5          5.8
2-7      MH_17         CF/9.5        6.0        5.1        ALARM
2-8      MH_19         CPA30         5.0        6.1        ALARM
2-9      MH_19         CPA30         5.0        5.7          5.4
2-10     MH_27         CPA30         3.0        4.1          4.4
2-11     MH_31         CF/9.5        6.0        4.8          4.8
2-12     MH_31         CPA/30        7.5        7.7          7.6
2-13                   -------       -------    -------       .0
2-14                   -------       -------    -------       .0
2-15                   -------       -------    -------       .0
2-16                   -------       -------    -------       .0
3-1                    Contact       3-1        OFF
```

Screen 10: Device Listing

Tying the Control Relay to Another Device

Control Relay Trigger

As explained above, the menu option for tying the control relay to another device simply refers to the process of selecting a transducer or binary device to trigger the control relay when the device goes into alarm. In Screen 10, notice that Device 3-1 has a designation of 3-1 in the *Threshold* column. This entry indicates that the control relay device is not tied to another device in the system. If it were, the Access Number of the device would be presented. The simple procedure below describes how to tie Device 3-1 to one of the 20 possible monitoring devices.

Procedure:

1) Select option ***7***, *Tie 3-1*, from the Device Menu and press ***<Enter>***. The software displays the following prompt:

```
Enter Access # (i.e. 2-3) >
```

2) Type the *Access #* of the desired device which, when in an alarm state, will trigger the control relay. Follow this entry with an ***<Enter>***. The software returns you to the Device Menu.

3) To confirm that the control relay has been tied to the desired device, quit the Device Menu by entering ***Q*** and ***<Enter>***. Then generate a listing of devices by selecting option ***1***, *Readings*, from the Main Menu. You should see the Access Number of the trigger device in the *Threshold* column for the 3-1 control relay device.

Once the uM260 monitor has been installed, monitoring devices connected, and the device database and setup requirements fulfilled as described in this manual section, the system can be placed in operation. Please refer back to this section, if necessary, when changes need to be made to the setup and device information.

Follow the simple procedure below to activate or deactivate the tone capability for your uM260 montior.

260 Device Data Form (for photo copying)

uM260 Micro Monitor Data Entry

Office: _____ Date: _____

	Device	Location (18 characters maximum)	Device Type (9 characters maximum)	Alarm Threshold (4 max.)
BINARY CONTACTS	1-1			
	1-2			
	1-3			
	1-4			
TRANSDUCERS	2-1			
	2-2			
	2-3			
	2-4			
	2-5			
	2-6			
	2-7			
	2-8			
	2-9			
	2-10			
	2-11			
	2-12			
	2-13			
	2-14			
	2-15			
	2-16			
CONTROL RELAY →	3-1			

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