

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

Introduction

The explanations in this document pertain to setting up the Modem version of the monitor for stand-alone operation. (Please refer to the *uM260 Installation & Operations Manual* for suggestions about using the uM260 with PressureMAP or CopperWATCH.) Included in the pages below are samples of the various menus, screens 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.

Two additional documents offer information on performing data entry for the LAN version of the monitor, using the text menu interface (Doc # 3070213.ASM) and the web browser interface (Doc # 3080213.ASM). The LAN and modem versions are similar in most respects, with the exception of the Alarm Center setup requirements and the fact that there is a browser interface available for the LAN version.

Logging On

The procedures required to log onto the modem version of the uM260 are described below. First you will need to launch the communications utility that you use for modem connections. If you are unfamiliar with the communications 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:



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

Screen 1: Login

- 1) Access the uM260 using the assigned modem phone number. Once you have connected to the system, you should see a basic password screen similar to the one below.

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

```
*****  
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

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.

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 Edit Password prevents unauthorized access to system configuration and database functions.

The System Menu for the Modem 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 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 1**—Enables you to set up the first of two possible Alarm Centers for the monitor. Provides for the assignment of a modem phone number, baud rate, etc.
- **Alarm Center 2**—Used to configure the second Alarm Center.
- **Send Test Alarm**—Once the Alarm Centers have been created, you have the ability to send a test alarm to the centers to confirm that the correct phone numbers have been entered and that everything is working properly.
- **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 (sections 5 and 6 of this manual).

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>**.

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 also need to supply anyone else who will be using the monitor with the new password name(s) before they can 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) >

```
*****
Monitor: uM260 Modem                               Version: 1.07
Name:                                               Elevation: 00000
SYSTEM MENU
1 Set User Password
2 Set Edit Password
3 Set Name
4 Enter Elevation
5 Alarm Center1
6 Alarm Center2
7 Send Test Alarm
8 Alarm Status
Q Quit
Choice>
```

Screen 3: System Menu

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 below:

```
*****
Monitor: uM260 Modem                               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 Center1
6 Alarm Center2
7 Send Test Alarm
8 Alarm Status
Q Quit

Choice>
```

Screen 4: Name Selection Displayed

*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 (CREEKSID) > 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 previously, 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*, and press <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 redisplay, showing the new *Elevation* data on the second text line at the top of the menu (see sample below).

```

*****
Monitor: uM260 Modem                               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 Center1
6 Alarm Center2
7 Send Test Alarm
8 Alarm Status
Q Quit

Choice>
    
```

Screen 5: Elevation Displayed

Defining Alarm Centers

With the *Office Name* and *Elevation* already established in the database, the next step is to set up the communications parameters for the Alarm Centers. As stated previously, the Modem version of the uM260 Monitor allows for two Alarm Centers, which can be any modem-equipped device that can display or print a message. The setup procedures for the Modem version involve entering phone numbers and baud rates for each Alarm Center.

Note: It is recommended that you independently test the alarm center modem numbers to confirm that they are working prior to setting them up in the uM260. An

invalid modem number will cause the system to hang as it waits for the connection to time out. This will prevent you from easily getting back into the System Menu to make changes or perform additional data entry.

IMPORTANT: If you intend to have the uM260 monitored by PressureMAP, you will need to designate one of the PressureMAP Alarm Receiver modems as an alarm center (step 2 below). In this way the uM260 will automatically call PressureMAP and send an alert when it detects a potential alarm condition. The modem number used for this purpose is called the *MAP Alert #* in PressureMAP's Office Information Screen for the uM260 monitor.

Procedure:

- 1) Select option **5**, *Alarm Center1*, from the Setup Menu, followed by **<Enter>**. The software will display the following prompt:

Enter Alarm Center Phone Number () >

*Alarm Center
Phone Number*

- 2) Type the telephone number assigned to the modem at the first Alarm Center location followed by **<Enter>**. Twelve characters are allowed for the phone number entry. Before entering the number, be sure to test the dialing sequence of the number. The complete phone number must be used, including any and all supplemental prefixes in the numeric sequence. Some examples of a prefix may be the *9* used in Centrex telephone systems (used to initiate calls outside the system) or the *1* that is needed to initiate a long distance call.

The software then displays your entry and asks to save the information:

**AC#: 18314755777
Save Alarm Center Phone Number y Yes n No? (n) >**

- 3) Make sure that the phone number you entered is correct. If it is not, press **<Enter>**. Then type **5** and **<Enter>** to redisplay the *Enter Alarm Center Phone Number* prompt. Retype the correct phone number, confirm its accuracy, and type **y <Enter>**.

*Baud Rate
Selection*

The software now displays the following baud rate options:

Choose Alarm Center baud rate:
1. 9600
2. 4800
3. 2400
4. 1200
5. 300
Enter choice () >

- 4) At the choice prompt, type the number which represents the baud rate of the modem at the designated Alarm Center location. Press **<Enter>**. The software produces the following prompt with your selected baud rate displayed:

Baud rate: [Your Entry] Save Baud rate y Yes n No? (n) >

- 5) If the desired baud rate is displayed, type *y* and <Enter>. If it is incorrect, type *n* and <Enter>. The System Menu will redisplay, and you can select option 5 to re-enter the correct information.

Screen 6 below illustrates how the System Menu looks during this editing process:

```

*****
Monitor: uM260 Modem                               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 Center1
6 Alarm Center2
7 Test Alarm Center
8 Alarm Status
Q Quit

Choice> 5

Enter Alarm Center Phone Number ( ) > 18314755777

AC#: 18314755777
Save Alarm Center Phone Number y Yes n No? (n) > y

Choose Alarm Center baud rate:
1. 9600
2. 4800
3. 2400
4. 1200
5. 300

Enter choice > 1

Baud rate: 9600 Save Baud rate y Yes n No? (n) > y
    
```

Screen 6: Alarm Center Information

Repeat steps 1 through 5 above to set up Alarm Center 2. Remember to select option 6 from the System Menu instead of option 5 for the second Alarm Center. All of the other steps are the same.

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.

*Confirm Alarm
Center Connection*

Sending a Test Alarm

Once the *Alarm Centers* have been established in the database, 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 to the defined centers in the following format:

```
UM260x
Name5678901234567890
TEST SSI_UM260_TEST_ALARM TEST
```

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

- 2) Log out of the System Menu by entering **Q**, *Quit*, and **<Enter>**. The text interface redisplay the Main Menu (Screen 2).
- 3) The final step is to confirm that the Alarm Center(s) have received the test alarm by checking the Alarm Center printer(s)and/or designated pager(s).

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
Distinction****Alarm Delivery Status**

The final System Menu option, *Alarm Status*, gives you the ability to determine 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.

**Alarm/Alert
Conditions**

- 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

Device Data Entry

The next step in setting up the uM260 monitor for stand-alone operation is to build the device database, which is a simple process for identifying and entering the four possible binary devices, the sixteen possible resistive and/or loop current transducers, and the control relay.

Please note that programming device data into the uM260 is not required if the uM260 is monitored by PressureMAP. For this application, it is necessary only to program the office and device data into the PressureMAP, and the software 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. The last page of this document includes a Data Entry Form that can be photocopied and used for this purpose. Example 1 below 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.

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	D	R	Y	E	R	1	-	M	A	J	O	R	C	P	A	M	S	T	D	O	P	E	N		
	1-2	D	R	Y	E	R	1	-	M	I	N	O	R	C	P	A	M	S	T	D	O	P	E	N		
	1-3	D	R	Y	E	R	2	-	M	A	J	O	R	C	P	A	M	S	T	D	O	P	E	N		
	1-4	D	R	Y	E	R	2	-	M	I	N	O	R	C	P	A	M	S	T	D	O	P	E	N		
TRANSDUCCERS	2-1	P	P	A	N	E	L						C	F	/	4	7	.	5			2	6	.	0	
	2-2	D	I	S	T	.	P	A	N	E	L			C	F	/	1	9	.	0			1	5	.	0
	2-3	M	H	_	6								C	P	A	3	0					5	.	0		
	2-4	M	H	_	9								C	P	A	3	0					5	.	0		
	2-5	M	H	_	9								C	P	A	3	0					5	.	0		
	2-6	M	H	_	9								C	P	A	3	0					5	.	0		
	2-7	M	H	_	1	7							C	F	/	9	.	5				6	.	0		
	2-8	M	H	_	1	9							C	P	A	3	0					5	.	0		
	2-9	M	H	_	1	9							C	P	A	3	0					5	.	0		
	2-10	M	H	_	2	7							C	P	A	3	0					3	.	0		
	2-11	M	H	_	3	1							C	F	/	9	.	5				6	.	0		
	2-12	M	H	_	3	1							C	P	A	3	0					7	.	5		
2-13																										
2-14																										
2-15																										
2-16																										
CONTROL RELAY	3-1																									

Example 5-1: Completed Data Entry Form

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Data Entry Form Column Explanations

As you can see on the completed form sample above, 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)
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 page 14 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***.

- **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.

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.

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

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

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 7) shown below.

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

```

*****
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 7: Device Menu

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) >

Access Number Categories

- 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. It is recommended that you enter devices sequentially as listed on the uM260 Data Entry Form (Example 1).

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

After you have typed the *Access Number* and pressed the <Enter> key, 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 inputting 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 7), 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) From the Device Menu select item *2*, *Enter Device Type*, followed by <Enter>. The following prompt displays:

```
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 next, as shown in Screen 8 below:

```

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 8: Select Device Type Menu

- 3) Enter the number or letter displayed on the Device Type Menu above that represents the type of device being entered. Reference the completed data entry form for device information.

After you select the appropriate Device Type, the software returns you to the Device Menu (Screen 7) 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, the device will alarm when tank capacity drops below 80% of maximum capacity.

Device Menu option 3, *Set Alarm Threshold*, enables you to define these important alarming values.

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 threshold value for the transducer as it appears on the data entry form followed by **<Enter>**. The software then returns you to the Device Menu (Screen 7) 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 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 information 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 air 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, perform additional editing functions, or return to the Main Menu.

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. If it is not tied to a device, 3-1 will display in the *Threshold* column for the control relay (as in Screen 9 below).

The procedures at the end of this section explain 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, and press **<Enter>**. The software performs the function without providing on-screen confirmation, and then it redisplay 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, 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 Screen 9 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 9: 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 9 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 displayed. The simple procedure below describes how to tie Device 3-1 to one of the 20 possible monitoring devices.

Before you proceed make sure that you are certain which device you intend to enter. Once you perform the step 1 in the procedure below, you will be required to enter an Access # before you can return to the Device Menu.

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 **I**, *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.

uM260 Device Data Form (for photo copying)

uM260 Micro Monitor Data Entry			
Office: _____		Date: _____	
Device	Location <small>(18 characters maximum)</small>	Device Type <small>(9 characters maximum)</small>	Alarm Threshold <small>(4 max.)</small>
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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