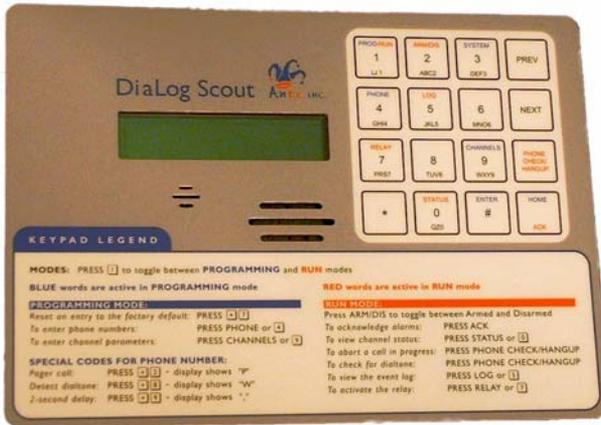


DiaLog Scout-RT

SPLC

Remote monitoring and
alarm notification system



User's Manual

Version 10.4
October 19, 2007



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- 1 INTRODUCTION..... 1**
 - 1.1 GENERAL OPERATION..... 1
- 2 INSTALLATION..... 2**
 - 2.1 ENABLING POWER..... 3
 - 2.2 CONNECTING THE SERIAL CABLE 3
 - 2.3 CONFIGURING THE SERIAL PORT 4
- 3 FRONT PANEL PROGRAMMING..... 5**
 - 3.1 HOW TO READ THE MENUS..... 5
 - 3.2 HOW TO USE THE KEYPAD 6
 - 3.3 HOW TO ENTER TEXT FOR NAMES 7
 - 3.4 PROGRAMMING SYSTEM SETTINGS..... 8
 - 3.5 PROGRAMMING PHONE SETTINGS..... 11
 - 3.6 SMS TEXT AND E-MAIL MESSAGES..... 14
 - 3.7 PROGRAMMING CHANNEL SETTINGS 15
- 4 PROGRAMMING FROM A PC..... 22**
- 5 PROGRAMMING REMOTELY OVER A PHONE..... 27**
 - 5.1.1 *Phone numbers*..... 27
 - 5.1.2 *Channel settings*..... 28
- 6 RUN MODE FUNCTIONS..... 30**
 - 6.1 PHONE STATUS MESSAGES 31
- 7 GETTING SYSTEM STATUS..... 31**
 - 7.1 FROM THE FRONT PANEL..... 32
 - 7.2 REMOTELY..... 34
- 8 VERIFYING COMMUNICATION..... 35**
- 9 LISTENING IN FROM A REMOTE CALL 36**
- 10 ACKNOWLEDGING ALARMS..... 37**
 - 10.1 ACKNOWLEDGE FROM THE KEYPAD..... 37
 - 10.2 ACKNOWLEDGE REMOTELY WHEN CALLED FROM THE SCOUT 38
 - 10.3 ACKNOWLEDGE WHEN YOU CALL THE SCOUT 39
- 11 ARMING AND DISARMING 40**
 - 11.1 FROM THE FRONT PANEL..... 40
 - 11.2 REMOTELY..... 40
- 12 WRITING DIGITALS AND ANALOGS 41**
 - 12.1 FROM THE FRONT PANEL..... 41
 - 12.2 REMOTELY..... 43
- 13 RETRIEVING THE EVENT LOG..... 45**
 - 13.1 TO VIEW THE EVENT LOG LOCALLY..... 45
 - 13.2 TO RETRIEVE THE EVENT LOG REMOTELY 46
- 14 ANTX TRACKING EVENT CODES..... 48**
- 15 REPLACING THE BACKUP BATTERY 49**
- 16 CUSTOMER SERVICE..... 50**
- 17 FCC REGISTRATION 50**

1 Introduction

The Scout-RT SPLC is the most user-friendly and reliable remote monitoring and alarm notification system available. The Scout provides reading and writing of PLC/Modbus registers over a serial link using the Modbus RTU protocol.

Mounted in an industrial aluminum enclosure, the Scout provides simple programming either locally through the integral keypad or via a local PC connection.

1.1 General Operation

The Scout reads inputs from a PLC or other Modbus device over a serial cable. Any input channel in the Scout can read/write the following registers from a PLC.

Function	Modbus Function Code
Read coils	01
Read Holding	03
Write Coil	05
Write Holding	06

The Scout supports reading from multiple Modbus IDs, as each channel references a unique PLC point specified by:

- ▶ Modbus slave ID
- ▶ Register type
- ▶ Register number

The Scout has 2 modes of operation – PROGRAM and RUN. During PROGRAM mode you can change how the Scout operates. During RUN mode the Scout is monitoring and performing alarm notification.

The Scout monitors up to 24 inputs continuously. When any one of the inputs changes from the normal-alarm or alarm-normal condition, the Scout immediately informs the Antx Tracking web-based system which records the information and issues any alarm notification methods specified.

When any monitored channel goes into and out of the alarm condition, the Scout automatically sends information to the Antx Tracking system via the internal GSM/GPRS modem.

NOTE: *In this version, the phone-based alarm notification has been made available.*

1.1.1 Antx Tracking Alarm Acknowledgment

Alarms are acknowledged remotely by pressing the '1' key on your phone keypad when requested by the Antx Tracking system. Antx Tracing informs you that the alarm has been "acknowledged".

2 Installation

You can mount the Scout to a panel or it can be flush mounted to a door. The brackets on the either side of the Scout can be removed and turned around for panel mounting.

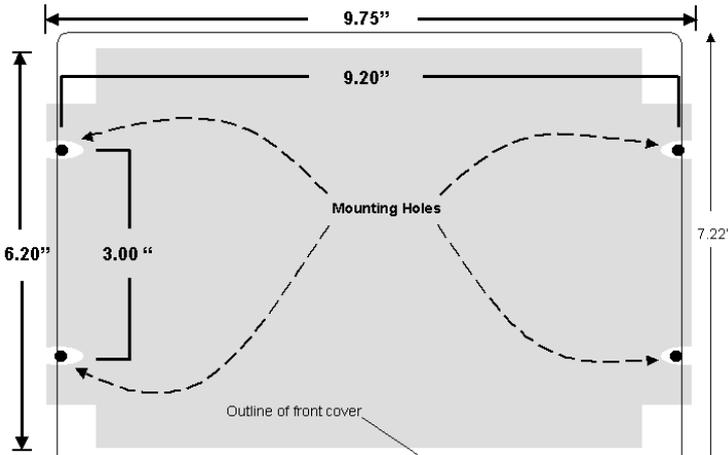


Figure 1 Panel Mount mounting holes

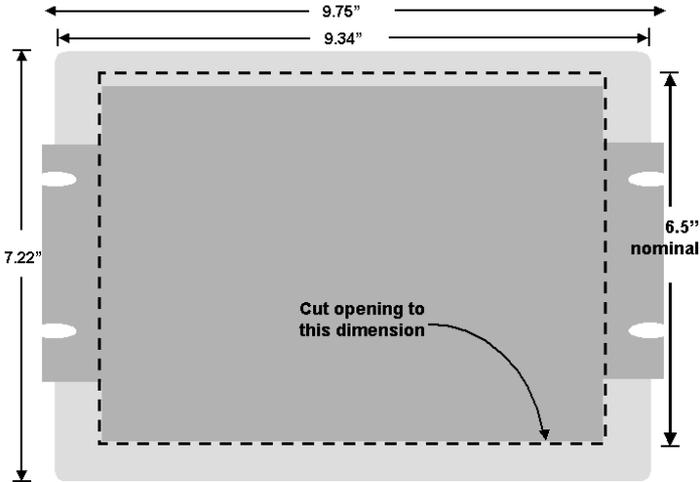


Figure 2 Flush Mount cut-out dimensions

2.1 Enabling power

Connect the provided DC power supply, or another source of 9 to 12VDC, to the Power connection. Move the On/Off switch to the up or On position. The Scout will start its power up diagnostics.

Upon completing the power up diagnostics, the Scout will be in Program Mode.

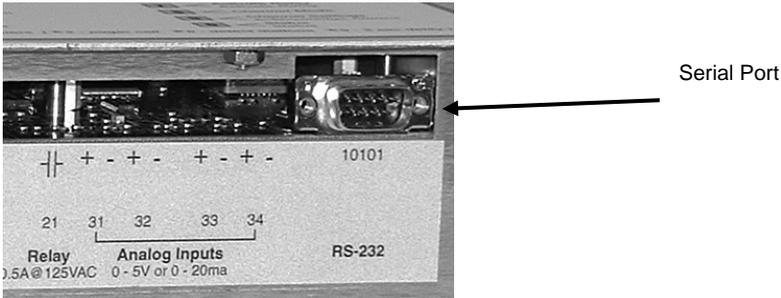
If an Access Code has been programmed, the Scout will start up in Run Mode.

2.2 Connecting the serial cable

The Scout has a 9-pin connector located on the far right-hand side. The pin configuration is as follows:

1	CD	5	GND
2	RCV data	7	RTS
3	XMT data	8	CTS

The cable between the Scout and the PLC/Modbus device will have to assure that the RCV on the Scout connects to the XMT on the PLC and visa versa.



2.3 Configuring the serial port

The serial port is configured for the following from the System Setup (3) function when in the Programming mode.

Port	1 – external DB9 connection, 2 – 10-pin header
	Port 1 - set to GSM Port 2 - set to Modbus Master when running - set to Debug when programming
Mode	0 – None, 1 - Debug, 2 – Slave, 3 – Master, 4-GSM
Baud Rate	
0 - 1200	5 – 19200
1 – 2400	6 - 28800
2 – 4800	7 – 38400
3 - 9600	8 – 57600
4 – 14400	9 - 115200
Parity	0 – None, 1 – Odd, 2 - Even
Data Bits	7 or 8
Stop Bits	1 or 2
Max Idle	5 – 4000 character times
Response Timeout	20 – 6000 msecs
Scan Rate	1 – 60 seconds
Block Requests	0 – off, 1 - on

3 Front Panel Programming

The Scout is programmed from the front panel by pressing the keypad to access the various portions of the system. For the most basic application, you can simply program some channels and put the Scout into the RUN mode.

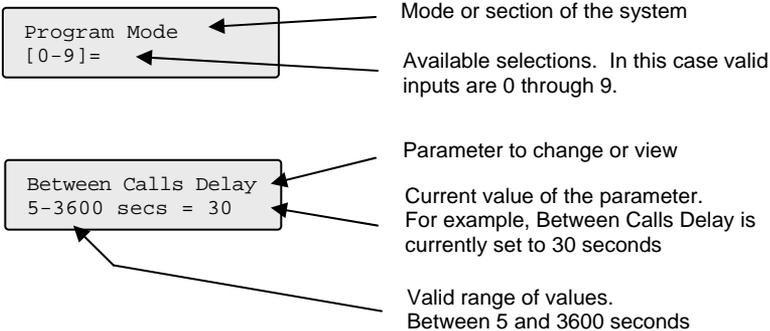
In more complex applications, you can program individual names for each channel being monitored, adjust the amount of time channels must be in the alarm condition before starting the call to Antx Tracking and other specific conditions.

When programming, all prompts are displayed. You can enter a value or press the # key to keep the current value and move to the next option.

NOTE: *When you have finished programming, return the Scout to the RUN mode by pressing the 1 key. If the Scout is not in RUN mode, it will not perform any alarm call operations.*

If you forget to return the Scout to RUN mode, it will automatically return to RUN mode after 30 minutes.

3.1 How to Read the Menus

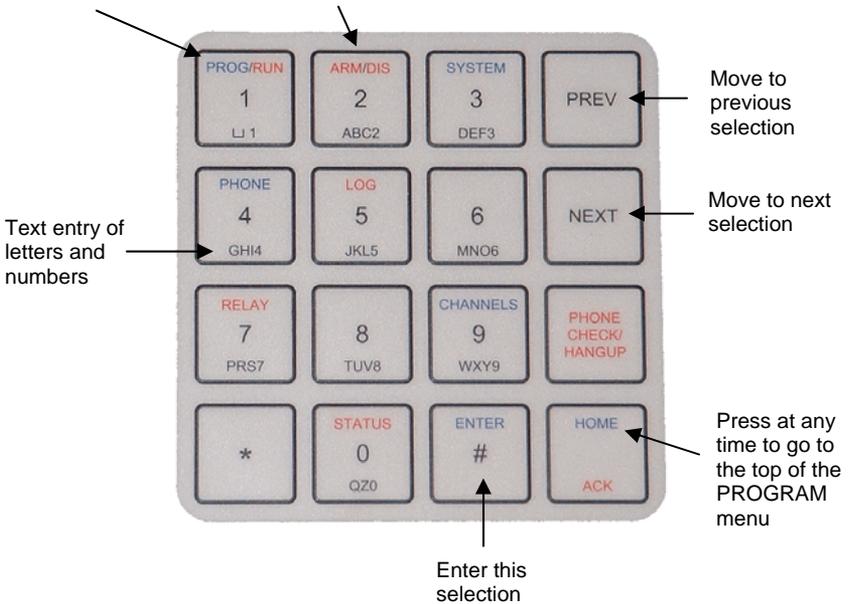


3.2 How to use the Keypad

The Scout keypad is designed to make programming easy. At the bottom of the front panel is a legend to assist in programming the most common functions. The keypad components are:

BLUE – function of key in PROGRAM mode

RED – function of key in RUN mode



The specific functions of each key are:

Key	Function in PROGRAM mode
1	Toggles the unit between PROGRAM and RUN mode.
3	Enter SYSTEM wide parameters
4	Enter PHONE numbers and parameters
9	Enter CHANNEL parameters
0	View STATUS of each channel
**	To toggle between Positive (+) and Negative (-) when entering zero, full scale and limit values.
ENTER	Enter or keep the current setting Exit the View STATUS screen
PREV	Go to the PREVIOUS selection
NEXT	Go to the NEXT selection
HOME	Go to the top of the PROGRAM mode menu

3.3 How to Enter Text for Names

The DiaLog Scout allows the user to enter names for the Site (Unit) and for each channel. Entering names is very similar to entering names on most cell-phones that are used today.

On the bottom of each key, there are letters and numbers. To select a specific letter or number, press that key the designated number of times. For example, to enter the letter 'L', press the 5 key 3 times.

Key to Press	Number of times to press the key				
	1	2	3	4	5
1	space	1			+
2	A	B	C	2	.
3	D	E	F	3	,
4	G	H	I	4	-
5	J	K	L	5	*
6	M	N	O	6	#
7	P	R	S	7	/
8	T	U	V	8	_
9	W	X	Y	9	
0	Q	Z	0	0	@
*	Erases previous letter				

3.4 Programming System Settings

System settings are generally programmed once during the initial setup of the Scout. Options in this section are:

- Site Message
- Access Code
- Date and Time
- Communication Ports
- Numeric ID
- Rings to Answer
- Reset to System Defaults

	What you do:	What the display shows:
Step 1	Press the 1 key to enter PROGRAM mode. You can now enter options 0 – 9.	Program Mode [0-9]=
Step 2	Press 3 <i>Enter Access Code if requested.</i>	NOTE: <i>If an Access Code has been programmed, the Scout will show a screen to enter it.</i>
Step 3	The pre-recorded Site Message is spoken through the speaker. Press 0 to listen to the current message, 1 to record a new message, or # to move to the next step.	Site ID Msg 0-play 1-rec =
	If you press 1, this message is displayed.	Press # to record
	Speak your message into the microphone and press the # key when finished. NOTE: <i>The speaker is intended only to confirm that your message was recorded as desired. The voice quality over the phone is excellent even though the voice quality over the speaker may be noisy.</i>	Recording . . . Press # to stop
Step 4	A 20 character name that is displayed on the screen. To enter the name, press the key that corresponds to the letter or number that you want.	Site Name nnnnnnnnnnnnnnnnnn

What you do:	What the display shows:
<p>Step 5</p> <p>The Numeric ID that will display on a pager is shown. Press # to keep the current value or enter a new value then press the # key.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Numeric ID nnnnnnnnnnnnnnnnnnnnnnn </div>
<p>Step 6</p> <p>The Access Code is displayed. Press # if OK or enter a new 4-digit Access Code.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Access Code nnnn </div>
<p>Step 7</p> <p>The Speaker Volume can be adjusted to be louder (up) or softer (down). Press # when you have the level you desire. NOTE: 7 is maximum volume level</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Speaker Volume 0-7 = 3 </div>
<p>Step 8</p> <p>Local Speaker specifies whether the speaker is on or off during alarm calls. If off, then the alarm call is not spoken over the local speaker. If On+Monitor, the alarm call and any sound coming in over the phone line are spoken over the local speaker. 0 – Off, 1 – On, 2 – On+Monitor</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Speaker Mode 0-2 = On+Monitor </div>
<p>Step 9</p> <p>Rings to Answer is the number of rings before the Scout answers. Press # if OK or enter a new value as nn (e.g. 03 for 3)</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Rings to Answer 1-20 = nn </div>
<p>Step 10</p> <p>Scan Rate is the rate at which the Scout reads all registers from the PLC. Press # if OK or enter a new value as nn (e.g. 03 for 3)</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> I/O Scan Rate 1-60 secs = 1 </div>
<p>Step 11</p> <p>Block I/O Mode enabled allows the Scout to optimize communication with the PLC by requesting data in blocks of registers. If the registers being read are nearly consecutive, then this should be on (1). If they are not, set this to off (0). Press # if OK or enter a new value.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Block I/O Mode 0-1 = 0 off </div>

	What you do:	What the display shows:
Step 12	Communication port setup. 1 for Comm1 - DB9, RS-232 port (external) 2 for Comm2 – 10-pin header, RS232	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Comm Setup 1-2 = 1 </div>
If not changing Comm port settings, skip to Step 20		
Step 13	Mode 0 – none (port not used) 1 – debug (programming) 2 – Modbus RTU Master 3 – GSM (cellular phone connection) 4 – EP250 (LOFA) 5 – Modbus Slave	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Mode 0-5 = 0 (none) </div>
Step 14	Set the baud rate for the serial port. 0 = 1200 to 9 = 115200.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Baud Rate 0-9 = 7 (38400) </div>
Step 15	Set the parity 0 – none, 1 – odd, 2 – even	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Parity 0-2 = 0 (none) </div>
Step 16	Set the data bits 7 or 8	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Data Bits 7-8 = 8 </div>
Step 17	Set the stop bits 1 or 2	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Stop Bits 1-2 = 1 </div>
Step 18	The number of characters the SCOUT waits between characters being received.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Max Idle 5-4000 chars = 100 </div>
Step 19	Response Timeout is the maximum time the SCOUT waits for a response from the PLC after a request is sent.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> CommX Resp Timeout 20-6000 = 2000 </div>

	What you do:	What the display shows:
Step 20	Set the time and date as needed. Press the # key if the value is correct already. NOTE: <i>The Scout uses a 24-hour clock.</i>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Set Date/Time 1-Set = </div>
Step 21	Reset Config back to the factory default values. Press 0 or # to keep your programming or 1 to reset back to the factory defaults.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Reset Config 1-rst = </div>
Step 22	Reset Events back to the factory default values. Press 0 or # to keep your programming or 1 to reset back to the factory defaults.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Reset Events 1-rst = </div>

3.5 Programming Phone Settings

NOTE: If you are doing all your alarm notification through the Antx Tracking system, you do not need to configure any phone settings. This section is only for calls you want to make using the voice-based alarm notification capability within the Scout.

Phone settings consist of options to set for all calls in or out of the Scout. They are generally setup once during initial installation.

Phone Settings include:

- Message repeat
- Phone numbers
 - Between call delay
 - Call Progress delay

	What you do:	What the display shows:
Step 1	Press the 1 key for PROGRAM mode. You can now enter options 0 – 9.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Program Mode 0-9 = </div>
Step 2	Press 4 <i>Enter Access Code if requested.</i>	NOTE: <i>If the Scout is in RUN mode and an Access Code has been programmed, the Scout will show a screen</i>

What you do:	What the display shows:												
	<i>to enter it.</i>												
<p>Step 3</p> <p>Msg Repeat is the number of times the alarm message will be repeated when an alarm call is made.</p> <p>Press # to keep the current value or enter a new value using 2 digits. (e.g. 03 for 3).</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Msg Repeat 0-20 = nn </div>												
<p>Step 4</p> <p>There are 8 phone numbers that can be entered in the Scout. These are processed in order from 1 to 8.</p> <p>Enter the position of the phone number you want to check or modify.</p> <p>Press # for no changes.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Enter Phone Pos 1-8 = </div>												
<p>Step 5</p> <p>Enter a call type</p> <table border="1" data-bbox="219 732 611 834"> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">Voice/Pager</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">SMS Text</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">Email</td> </tr> </table>	1	Voice/Pager	2	SMS Text	3	Email	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Pos 1 Call Type 1-3 = 1 Voice/Pager </div>						
1	Voice/Pager												
2	SMS Text												
3	Email												
<p>Step 6</p> <p>For phone and SMS messages:</p> <p>The phone number in the position specified is shown. Press # if OK or enter a new phone number.</p> <p>NOTE: <i>The phone number can be up to 25 numbers long.</i></p> <table border="1" data-bbox="219 1062 600 1268"> <tr> <td style="text-align: center;">*2</td> <td style="text-align: center;"><i>For a pager call</i></td> </tr> <tr> <td style="text-align: center;">*7</td> <td style="text-align: center;"><i>Deletes phone number</i></td> </tr> <tr> <td style="text-align: center;">*8</td> <td style="text-align: center;"><i>Detects a dialtone</i></td> </tr> <tr> <td style="text-align: center;">*9</td> <td style="text-align: center;"><i>2-second delay</i></td> </tr> <tr> <td style="text-align: center;">**</td> <td style="text-align: center;"><i>for a '*'</i></td> </tr> <tr> <td style="text-align: center;">*#</td> <td style="text-align: center;"><i>for a '#'</i></td> </tr> </table> <p>(e.g. 5124442233P would call a pager at 5124442233)</p>	*2	<i>For a pager call</i>	*7	<i>Deletes phone number</i>	*8	<i>Detects a dialtone</i>	*9	<i>2-second delay</i>	**	<i>for a '*'</i>	*#	<i>for a '#'</i>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Ph Num: 1234567890 </div>
*2	<i>For a pager call</i>												
*7	<i>Deletes phone number</i>												
*8	<i>Detects a dialtone</i>												
*9	<i>2-second delay</i>												
**	<i>for a '*'</i>												
*#	<i>for a '#'</i>												
<p>For e-Mail – enter the e-mail address to receive the message.</p> <p>See Section 3.3 How to Enter Text</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> E:sales@antx.com </div>												

	What you do:	What the display shows:								
	for Names for specific details.									
Step 7	<p>There are 8 phone numbers that can be entered in the Scout. These are processed in order from 1 to 8.</p> <p>Enter the position of the phone number you want to check or modify.</p> <p>Press # for no changes.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> PosX Call Type 1-3 = </div>								
Step 8	<p>The phone number in the position specified is shown. Press # if OK or enter a new phone number.</p> <p>NOTE: <i>The phone number can be up to 25 numbers long.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">*2</td> <td><i>For a pager call</i></td> </tr> <tr> <td style="text-align: center;">*7</td> <td><i>Deletes phone number</i></td> </tr> <tr> <td style="text-align: center;">*8</td> <td><i>Detects a dialtone</i></td> </tr> <tr> <td style="text-align: center;">*9</td> <td><i>2-second delay</i></td> </tr> </table> <p>(e.g. 5124442233P would call a pager at 5124442233)</p>	*2	<i>For a pager call</i>	*7	<i>Deletes phone number</i>	*8	<i>Detects a dialtone</i>	*9	<i>2-second delay</i>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Pos 1 Phone Number nnnnnnnnnnnnnnnnnnn </div>
*2	<i>For a pager call</i>									
*7	<i>Deletes phone number</i>									
*8	<i>Detects a dialtone</i>									
*9	<i>2-second delay</i>									
Step 9	<p>Specifies the amount of time to wait before calling the next number in the list.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Pos 1 Next Call Dly 5-3600 secs = nnnn </div>								
Step 10	<p>If Notify Once is enabled, then upon a successful call, this particular phone number will not be called again.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Pos 1 Notify Once 0-1: disabled </div>								
Step 11	<p>This is the amount of time the Scout waits after issuing the last digit in the phone number before issuing the alarm or numeric pager message.</p> <p>NOTE: <i>0 means Call Progress is enabled. The Scout will call and wait until the phone has been answered before the alarm message is delivered.</i></p> <p><i>If the Scout calls and never delivers the message, then the Scout is not able to determine that the phone has been answered, probably because the voice answering the phone is not loud enough.</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Pos 1 Call Prog Dly 0-60 secs = nn </div>								
Loop back to Step 5										

3.6 SMS text and e-Mail messages

SMS text and e-mail messages can be sent if the Scout is equipped with a GSM cell phone and the SMS/e-Mail option has been enabled.

SMS text message format:

Site ID, channel name, channel name value engineering units

Example:

Remote Site 343, Tank Level 123.4 ft

e-Mail text message format:

Site ID

channel name

channel name value engineering units

Example:

Remote Site 343

Main Pump Down

Tank Level 123.4 ft

3.7 Programming Channel Settings

This section allows you to configure the information specific to each channel or condition being monitored. For each channel the following options can be programmed.

Channel Types	
System	
(01) - Power Fail	(02) - Low Battery
(03) Low Low Battery	(05) – Communications
channel name	
channel message	
channel mode (alarm or status)	
alarm delay	
relay (coil) to activate on alarm	
Digitals (Coil Registers)	
(11-26)	
slave address	
register number	
channel ID voice message	
channel name	
channel mode	
channel state (Normally Open/Normally Closed)	
alarm delay	
redial delay	
relay (coil) to activate on alarm	
pulse duration (if mode is set to Status Only)	
Analogs (Holding Registers)	
(31-38)	
slave address	
register number	
channel ID voice message	
channel name	
register value (signed or unsigned)	
engineering units	
decimal position	
scale input (yes or no)	
zero and full scale, min and max counts	
channel mode	
alarm delay	
redial delay	
low limit	
high limit	
relay (coil) to activate on low alarm (1-16)	
relay (coil) to activate on high alarm (1-16)	

	What you do:	What the display shows:
Step 1	<p>Press the 1 key to enter PROGRAM mode.</p> <p>You can now enter options 0 – 9.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Program Mode 0-9 = </div>
Step 2	<p>Press 9</p>	
Step 3	<p>Enter channel number:</p> <p>01-05 for system 11-26 for digital 31-38 for analog</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Digital Channels 11-26 = </div>

Digital (Read and Write Coils)		
	What you do:	What the display shows:
Step 1	<p>Enter the Modbus Slave ID of the remote PLC or device that this channel will be read from.</p> <p>0 = disabled</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Slave ID 0-247 = </div>
Step 2	<p>Enter the register number to read/write in the PLC or Modbus device.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Reg Num 1-9999 = </div>
Step 3	<p>The Scout will repeat the current channel message.</p> <p>If the message is OK, press #.</p> <p>To record a new message, press 1 and speak your new 6-second message into the microphone followed by the # key.</p> <p>To listen to the current message again, press 0.</p> <p>NOTE: This message is ONLY delivered if the Scout is configured to make phone calls directly instead of through Antx Tracking.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX ID Msg 0-play 1-rec = </div>

Digital (Read and Write Coils)

	What you do:	What the display shows:												
Step 4	<p>Each channel can have a 20 character name that will be displayed whenever the Status is shown or a channel is in alarm.</p> <p>To enter the name, press the key that corresponds to the letter or number that you want.</p> <p>To move to the next character, wait 1 second between entries.</p> <p>Press # key when finished.</p> <p>For example,</p> <table border="1"> <thead> <tr> <th>Character/#</th> <th>How to enter</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2 key – 1 time</td> </tr> <tr> <td>B</td> <td>2 key – 2 times</td> </tr> <tr> <td>C</td> <td>2 key – 3 times</td> </tr> <tr> <td>2</td> <td>2 key – 4 times</td> </tr> <tr> <td>S</td> <td>7 key – 3 times</td> </tr> </tbody> </table>	Character/#	How to enter	A	2 key – 1 time	B	2 key – 2 times	C	2 key – 3 times	2	2 key – 4 times	S	7 key – 3 times	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Name nnnnnnnnnnnnnnnnnn </div>
Character/#	How to enter													
A	2 key – 1 time													
B	2 key – 2 times													
C	2 key – 3 times													
2	2 key – 4 times													
S	7 key – 3 times													
Step 5	<p>The Channel Mode has 3 modes: 0 – disabled (not used) 1 – status only (values are read, but no alarms are generated) 2 – CallOnAlarm – (values are read and alarms are generated)</p> <p>NOTE: <i>for a relay output (write coil), the mode must be set to Status Only</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Mode 0-2 = 2 CallOnAlarm </div>												
Step 6	<p>The Alarm State is 0 for normally open and 1 for normally closed.</p> <p>NOTE: <i>An alarm occurs when the Scout transitions out of these 'normal' conditions.</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Normal State 0-1 = 0 Open </div>												
Step 7	<p>The Alarm Delay specifies the amount of time the input must be in the alarm condition before a call-out begins.</p> <p>Press # if OK or enter a new 5-digit value as nnnnn (e.g. 00300 for 300)</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Alarm Delay 0-65535 sec = nnnnn </div>												
Step 8	<p>The Redial Delay is the amount of time after a channel has been acknowledged before another call is made if the channel is still in the alarm condition.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Redial Dly 1-9999 mins = 60 </div>												

Digital (Read and Write Coils)

	What you do:	What the display shows:
Step 14	<p>To Activate the Digital (coil) when the channel goes into alarm enter the channel number of a Digital (Coil) channel.</p> <p>NOTE: <i>The relay will follow the channel into and out of alarm.</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Alarm Digital Coil 1-16 </div>
Step 15	<p>The Pulse Duration specifies the length of time the digital will stay activated.</p> <p>If you specify 0, then the digital will deactivate when all channels that reference it are in the normal condition.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Pulse Dur 0-86400 sec = nnnnn </div>
<p>Loop back to Step 1 for Digital channels</p>		

Analog (Read and Write Holding)

	What you do:	What the display shows:
Step 1	<p>Enter the Modbus Slave ID of the remote PLC or device that this channel will be read from.</p> <p>0 = disabled</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Slave ID 0-247 = </div>
Step 2	<p>Enter the register number to read/write in the PLC or Modbus device.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Reg Num 1-9999 = </div>
Step 3	<p>The Scout will repeat the current channel message.</p> <p>If the message is OK, press #.</p> <p>To record a new message, press 1 and speak your new 6-second message into the microphone followed by the # key.</p> <p>To listen to the current message again, press 0.</p> <p>NOTE: This message is ONLY delivered if the Scout is configured to make phone calls directly instead of through Antx Tracking.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX ID Msg 0-play 1-rec = </div>

Analog (Read and Write Holding)

	What you do:	What the display shows:																						
Step 4	<p>Each channel can have a 20 character name that will be displayed whenever the Status is shown or a channel is in alarm.</p> <p>To enter the name, press the key that corresponds to the letter or number that you want.</p> <p>To move to the next character, wait 1 second between entries.</p> <p>Press # key when finished.</p> <p>For example,</p> <table border="1"> <thead> <tr> <th>Character/#</th> <th>How to enter</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2 key - 1 time</td> </tr> <tr> <td>B</td> <td>2 key - 2 times</td> </tr> <tr> <td>C</td> <td>2 key - 3 times</td> </tr> <tr> <td>2</td> <td>2 key - 4 times</td> </tr> <tr> <td>S</td> <td>7 key - 3 times</td> </tr> </tbody> </table>	Character/#	How to enter	A	2 key - 1 time	B	2 key - 2 times	C	2 key - 3 times	2	2 key - 4 times	S	7 key - 3 times	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Name nnnnnnnnnnnnnnnnnn </div>										
Character/#	How to enter																							
A	2 key - 1 time																							
B	2 key - 2 times																							
C	2 key - 3 times																							
2	2 key - 4 times																							
S	7 key - 3 times																							
Step 5	<p>Indicates how the value being read by the Scout is interpreted.</p> <p>1 - 16-bit signed 0 - 16-bit unsigned</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Reg Value 0-1 = 1 signed </div>																						
Step 6	<p>Specify the engineering units:</p> <table border="1"> <tbody> <tr> <td>0 - none</td> <td>1 - pct</td> </tr> <tr> <td>2 - ppm</td> <td>3 - gals</td> </tr> <tr> <td>4 - gpm</td> <td>5 - gph</td> </tr> <tr> <td>6 - ft</td> <td>7 - rpm</td> </tr> <tr> <td>8 - psi</td> <td>9 - degC</td> </tr> <tr> <td>10 - degF</td> <td>11 - inches</td> </tr> <tr> <td>12 - meters</td> <td>13 - kmeters</td> </tr> <tr> <td>14 - liters</td> <td>15 - kliters</td> </tr> <tr> <td>16 - grams</td> <td>17 - kg</td> </tr> <tr> <td>18 - lbs</td> <td>19 - volts</td> </tr> <tr> <td>20 - ma</td> <td></td> </tr> </tbody> </table>	0 - none	1 - pct	2 - ppm	3 - gals	4 - gpm	5 - gph	6 - ft	7 - rpm	8 - psi	9 - degC	10 - degF	11 - inches	12 - meters	13 - kmeters	14 - liters	15 - kliters	16 - grams	17 - kg	18 - lbs	19 - volts	20 - ma		<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Engr Units 0-20 = 0 (none) </div>
0 - none	1 - pct																							
2 - ppm	3 - gals																							
4 - gpm	5 - gph																							
6 - ft	7 - rpm																							
8 - psi	9 - degC																							
10 - degF	11 - inches																							
12 - meters	13 - kmeters																							
14 - liters	15 - kliters																							
16 - grams	17 - kg																							
18 - lbs	19 - volts																							
20 - ma																								
Step 7	<p>Specify the location of the decimal point by indicating the number of digits to the right of the decimal point.</p> <p><i>For example, 2 would provide 44.33</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ChanXX Dec Pos 0-5 = 1 </div>																						

Analog (Read and Write Holding)

	What you do:	What the display shows:
Step 8	<p>If the value being read is in engineering units, then set to 0.</p> <p>If the value being read is in counts, then it can be scaled to engineering units in the Scout. Set to 1.</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX ScaleInput 0-1 = 0 No </div>
	Skip to Step 13 if not Scaling	
Step 9	<p>Specify the zero value in engineering units that corresponds to the minimum value in counts.</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Zero Scale +/-99999 = ±0.0 </div>
Step 10	<p>Specify the span value in engineering units that corresponds to the minimum value in counts.</p> <p><i>For example, to convert a value that ranges from 20.0 to 100.0 deg, the Zero value would be 200 and the Full Scale would be 1000, assuming a Decimal Position of 1.</i></p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Full Scale +/-99999 = ±100.0 </div>
Step 11	<p>Specify the minimum value in counts that will be read from the PLC/Modbus register.</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Min Counts 0-65535 = 0 </div>
Step 12	<p>Specify the maximum value in counts that will be read from the PLC/Modbus register.</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Max Counts 0-65535 = 32767 </div>
Step 13	<p>The Channel Mode has 3 modes:</p> <p>0 – disabled (not used)</p> <p>1 – status only (values are read, but no alarms are generated)</p> <p>2 – CallOnAlarm – (values are read and alarms are generated)</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Mode 0-2 = 2 CallOnAlarm </div>
Step 14	<p>The Alarm Delay specifies the amount of time the input must be in the alarm condition before a call-out begins.</p> <p>Press # if OK or enter a new 5-digit value as nnnnn (e.g. 00300 for 300)</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Alarm Delay 0-65535 sec = nnnnn </div>
Step 15	<p>The Redial Delay is the amount of time after a channel has been acknowledged before another call is made if the channel is still in the alarm condition.</p>	<div style="border: 1px solid black; padding: 5px;"> ChanXX Redial Delay 1-9999 mins = 60 </div>

Analog (Read and Write Holding)		
	What you do:	What the display shows:
Step 16	<p>If the current reading is below the Low Limit, the channel goes into alarm and initiates a call and/or a relay activation.</p> <p>NOTE: <i>always has 1 digit to the right of the decimal</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> ChanXX Low Limit 0-99999 = xxxxxx </div>
Step 17	<p>If the current reading exceeds the High Limit, the channel goes into alarm and initiates a call and/or a relay activation.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> ChanXX High Limit 0-99999 = xxxxxx </div>
Step 18	<p>To Activate the Digital (coil) when the channel goes into alarm enter the channel number of a Digital (Coil) channel.</p> <p>NOTE: <i>The digital will follow the channel into and out of alarm.</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> ChanXX Lo Alm Digital Coil 1-16 </div>
Step 19	<p>To Activate the Digital (coil) when the channel goes into alarm enter the channel number of a Digital (Coil) channel.</p> <p>NOTE: <i>The digital will follow the channel into and out of alarm.</i></p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> ChanXX Hi Alm Digital Coil 1-16 </div>
Loop back to Step 1 (Analog channels)		

4 Programming from a PC

The Scout can be programmed from a PC by using either port on the Scout. Use whichever port is more convenient for your needs.

Port 1 is connected to the GSM modem and Port 2 is connected to the PC. Set the port that you are using to Debug mode (via Programming > System)

NOTE: When the Scout is being programmed from a PC, the Scout is not scanning the PLC.

On your PC, you can use Hyperterminal or any other terminal emulation package.

Connect the Scout to the PC and start your terminal emulation program, making sure to adjust your communications settings to match those on port 2 of the Scout.

The Scout displays the following menu after the "Enter" key is pressed on your PC.

```
Dialog Scout - Scout-RT SPLC (v3.3)

0) View System Cfg          (view system configuration programming)
1) View Chan Cfg           (view channel programming)
2) Timers                   (view running timers)
3) Data                     (view current data for each channel)
4) Events                   (view the event log)
5) Report                   (view a status report of all channels)
6) Site Setup               (program the Scout)
7) System Maint             (system maintenance items)

Cmd =>
```

To program the Scout, use Option 6 - Site Setup. The following menu is displayed:

```

Cmd => 6

***** Site Setup *****

1) System
2) Channels
3) PSTN
4) GSM
5) Ports
6) Prog GSM

...> 2
Dialog Scout - Scout-RT SPLC (v9.6)

*** Channel Configuration ***

Chan Num [1-16]: 12
Device ID [-1-247]: 240
Register Number [1-9999]: 101
Chan Name: Pump 1 Failure
Mode [0-2]: 2 (CallOnAlarm)
Normal [0-1]: 0 (Open)
Alarm Delay (secs) [0-65535]: 3
Redial After ACK Delay (secs) [0-86400]: 3600
Alarm Relay [1-16]: -1 (disabled)

*** Channel Configuration ***

Chan Num [1-8]: 31
Device ID [-1-247]: 240
Register Number [1-9999]: 221
Chan Name: Ana 1
Mode [0-2]: 2 (CallOnAlarm)
Alarm Delay (secs) [0-65535]: 3
Redial After ACK Delay (secs) [0-86400]: 3600
Decimal Position [0-5]: 1
Engineering Units [0-18]: 6 (ft)
Signed Register [0-1]: 1
Scale Value [0-1]: 1
Zero Scale [-99999-99999]: 0 (+0.0)
Full Scale [-99999-99999]: 1000 (+100.0)
Zero Scale Counts [-65535-65535]: 0
Full Scale Counts [-65535-65535]: 32767
Low Alarm Limit [-99999-99999]: 200 (+20.0)
High Alarm Limit [-99999-99999]: 500 (+50.0)
Low Alm Relay [1-16]: -1
High Alm Relay [1-16]: -1

```

Enter new values or press Enter to leave as is.

Enter new values or press Enter to leave as is.

The following is an example of the View Configuration

```

Cmd => 0
                System Configuration
-----
Model           : Scout-RT SPLC
Cfg Ver        : 0200
Cfg Size       : 2808
Cfg Timestamp   : 06/28/06 08:45:00

ID Msg Recorded : No
Alpha ID       : My Scout RT
Numeric ID     : 5122552800
Access Code    : -001
Message Repeat : 2
Volume        : 3
Speaker Mode   : On+Monitor
Block Requests : 1
Scan Rate (secs) : 1
Auto Updates   : enabled
  Interval     : 01:00:00
  Start Time   : 00:00:00

Country        : US
Ring Count     : 2
Validate Ring  : disabled
DTMF Gain     : 0
DTMF On/Off   : 80 msecs

Busy:
  Min On      : 350 msecs
  Max On      : 650 msecs
  Min Off     : 350 msecs
  Max Off     : 650 msecs

Ringback 1:
  Min On      : 1700 msecs
  Max On      : 2300 msecs
  Min Off     : 3700 msecs
  Max Off     : 4300 msecs

Port:           1       2
-----
Mode            Master  Debug
Slave ID       126     126
Baud           9600    9600
Parity         None    None
Data Bits      8       8
Stop Bits      1       1
Max Idle (chars) 100    20
Resp Timeout (msecs) 2000 2000
    
```

Continued from previous page...

```
-----
GSM Config
-----
GSM Model      : SAG 1203
MODEM ID      : AXSL40009
Attach String  : *99#
SMS Option    : 1
Auto ACK      : 1
Svc Provider ID : 2
  Name        : Cingular
  Gateway Number : +121
  APN         : isp.cingular
  User Name   : ISP@CINGULARGPRS.COM
  Password    : CINGULAR1
Forwarding Char : 0a
Src/Dst Port   : 2290
IP Address     : 066.219.045.101
GPS Mode      : Fixed
Time Zone     : Central
Latitude      : N30 30 15.300
Longitude     : W097 41 34.000

-----
Phone List
-----
Position 1
  Phone Number      : 2558235
  Call Progress Delay : 0 secs
  Next Call Delay   : 30 secs
  . . .
Position 8
  Phone Number      :
  Call Progress Delay : 0 secs
  Next Call Delay   : 30 secs
```

The following are from the View Channel menu option:

```

***** Channels *****
1) Chan Configs
2) Register Summary
3) Slave Device List

Channel Config
-----
Chan Type [1-Sys, 2-Dig, 3-Ana]: Dig

Chan Num [1-16]: 1
Chan 6: Dig 1
  Slave ID      : 2
  Reg Number    : 101
  Msg Recorded  : No
  Alm Mode      : CallOnAlarm
  Normal        : Open
  Alm Delay     : 3 secs
  Redial Delay  : 3600 secs
  Relay Chan    : -1
  Pulse Dur     : 0 secs

Chan Num [1-8]: 1
Chan 22: Ana 1
  Slave ID      : 240
  Reg Number    : 221
  Msg Recorded  : No
  Alm Mode      : CallOnAlarm
  Alm Delay     : 3 secs
  Redial Delay  : 3600 secs
  Dec Pos       : 1
  Engr Units    : 0 (none)
  Reg Value     : signed
  Scale Input   : yes
  Zero Scale    : +0.0
  Full Scale    : +100.0
  Min Counts    : 0
  Max Counts    : 32767
  Low Limit     : ...
  High Limit    : ...
  Low Relay     : -1
  High Relay    : -1

Register Summary
-----
D01: Dig 1           ID=2    Reg=101
D05: Dig 5           ID=25   Reg=201
D11: Dig 11          ID=247  Reg=1
A01: Ana 1           ID=240  Reg=221
A08: Ana 8           ID=121  Reg=3001
    
```

5 Programming remotely over a phone

NOTE: This capability is ONLY available if the GSM SIM card supports voice calling. If the Scout is only being used to alarm via Antx Tracking, then this capability is not available.

When you call-in, the Scout will:

- Repeat the current status
- 3 “beeps”

You have 5 seconds after the 3 ‘beeps’ to press the # key on your phone to inform the Scout that you want to perform remote programming. After pressing the # key, the Scout will say “System ready, enter selection.”

5.1.1 Phone numbers

	What you do:	What the Scout says:
Step 1	Press # within 5 seconds after hearing 3 “beeps”	“System ready. Enter selection.”
	Press 4 or press # if finished. <i>NOTE: If an Access Code has been programmed, the Scout says “Enter Access Code”</i>	“Phone setup. Enter phone position. Or press # to exit”
Step 2	Enter Call type. Press # when finished.	“The Call Type is” [1-4]
Step 3	Enter a new phone number followed by the # key or press the # key to keep the current phone number.	“Position” nn “Phone number is” nnnnnnnnnnnn
Step 4	Press # if the number is OK or enter a new number followed by the # key.	“Position” nn “Phone number is” nnnnnnnnnnnn “Enter new number or press # to exit”
Loop back to Step 2		

5.1.2 Channel settings

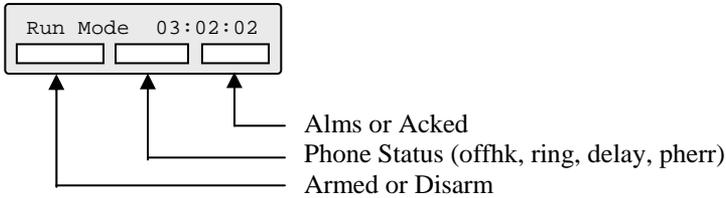
	What you do:	What the Scout says:				
		“System ready. Enter selection.”				
Step 1	Press 9 or press # if finished.	NOTE: <i>If an Access Code is been programmed, the Scout says “Enter Access Code”</i>				
	Enter Access Code if requested.					
Step 2	Enter a channel number	“Channel setup.”				
		“Enter channel number or press # to exit”				
For Digital (Coils) ...						
Step 3	If you enter a 1 to record a new message, listen to the instructions.	“The channel message is <message>. Press 1 to record a new message or press # to exit.”				
Step 4	Enter your selection	“The channel normal state is” open/closed. “Enter new normal state or # to exit”				
	<table border="1"> <tr> <td>#</td> <td>Keep current</td> </tr> <tr> <td>0</td> <td>Normally open</td> </tr> <tr> <td>1</td> <td>Normally closed</td> </tr> </table>		#	Keep current	0	Normally open
#	Keep current					
0	Normally open					
1	Normally closed					
	NOTE: <i>A new entry is repeated back.</i>					
Step 5	Enter your selection	“The channel mode is” “status only” or “call on alarm” “Enter new selection or press # to exit”				
	<table border="1"> <tr> <td>#</td> <td>Keep current</td> </tr> <tr> <td>0</td> <td>Status only</td> </tr> <tr> <td>1</td> <td>Call on alarm</td> </tr> </table>		#	Keep current	0	Status only
#	Keep current					
0	Status only					
1	Call on alarm					
	NOTE: <i>A new entry is repeated back.</i>					
Loop back to Step 2						
For Analog ...						
Step 6	If you enter a 1 to record a new message, listen to the instructions.	“The channel message is <message>. Press 1 to record a new message or press # to exit.”				

	What you do:	What the Scout says:						
Step 7	Enter your selection <table border="1" style="margin-left: 20px;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">Keep current</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">Status only</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">Call on alarm</td> </tr> </table> <p>NOTE: <i>A new entry is repeated back.</i></p>	#	Keep current	0	Status only	1	Call on alarm	“The channel mode is” “status only” or “call on alarm” “Enter new selection or press # to exit”
#	Keep current							
0	Status only							
1	Call on alarm							
Step 8	Enter a new low limit with 1 assumed digit to the right of the decimal, or # if the current value is OK. Enter *7 to disable the low limit. e.g. 252 would be 25.2 % <p>NOTE: <i>A new entry is repeated back.</i></p>	“The channel low limit is nn.n %” “Enter new selection or press # to exit”						
Step 9	Enter a new high limit with 1 assumed digit to the right of the decimal. Enter *7 to disable the high limit. e.g. 850 would be 85.0 % <p>NOTE: <i>A new entry is repeated back.</i></p>	“The channel high limit is nn.n %” “Enter new selection or press # to exit”						
<p>Loop back to Step 2</p>								
<p>For Write Coils...</p>								
Step 10	If you enter a 1 to record a new message, listen to the instructions.	“The channel message is <message>. Press 1 to record a new message or press # to exit.”						
Step11	Enter your selection <p>NOTE: <i>A new entry is repeated back.</i></p>	“The channel pulse duration is” nnnn “Enter new selection or press # to exit”						
<p>Loop back to Step 2</p>								

6 RUN Mode functions

While the Scout is in RUN mode it is scanning all inputs, evaluating them for transitions into and out of alarm conditions, performing alarm calls and updating the display.

The default RUN mode display looks like this:



There are 7 functions that can be performed while in RUN mode.

Function	Capability
Keypad 0	Get system status
Keypad 1	Enter Program mode
Keypad 2	Toggle Arm/Disarm
Keypad 5	View Event Log
Keypad 7	Activate Relay
Keypad 9	Acknowledge alarms
Phone Check	Test phone line

6.1 Phone Status messages

The following messages can be displayed in the Phone Status field.

Message	Meaning
delay	Scout is waiting the between call delay to make another call
erSMS	General SMS error
lkout	Lockout – GSM cell phone is turned off for 1 hour while charging the battery
noCAR	Lost carrier while transmitting SMS or e-mail
noGSM	Cannot communicate with the GSM cell phone (serial cable connected? SIM card installed correctly?)
noGW	SMS/e-mail Gateway number is invalid
noReg	No registration on GSM phone (SIM card installed correctly? Out of minutes?)
noNUM	SMS phone number invalid
noRSP	No response from the SMS service center
noSC	No SMS service center detected
offhk	Phone is offhook for a phone call or phone check.
pherr	Phone error – no current detected from phone line. (unplugged?)
phflt	Phone fault – no dialtone detected (dead line?)
ring	Ring is detected on call out or call in.
WrErr	Write error to the Serial EEPROM on the Scout board. (contact Antx for support/repair)

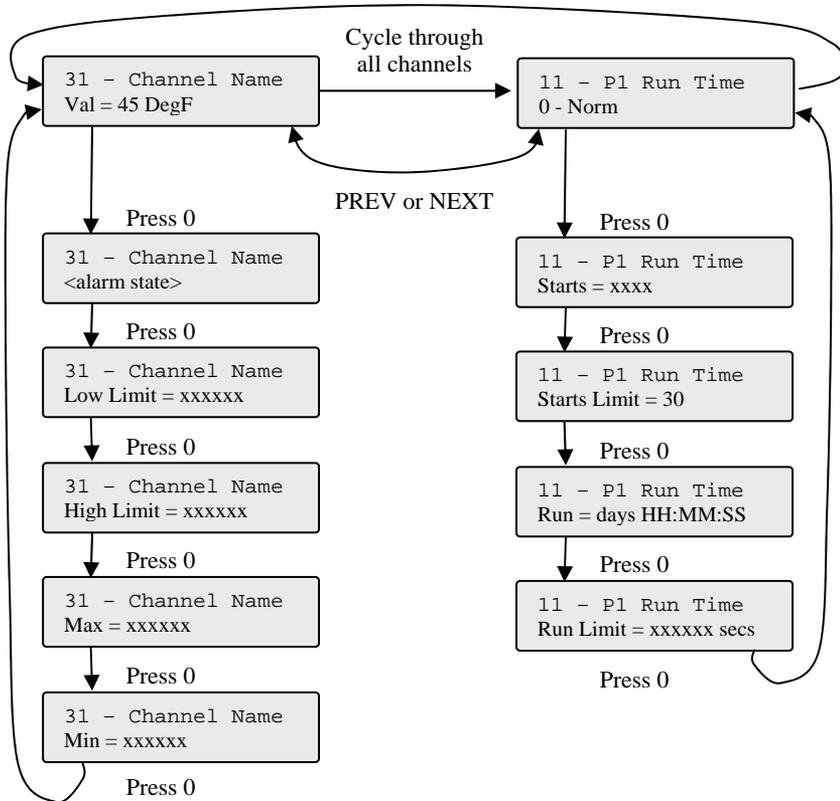
7 Getting System Status

System Status reports the current conditions of the Scout. It will report any channels that are in alarm or acknowledged, including the primary power, battery and communications channels.

7.1 From the front panel

The Scout displays the first channel (Power). To view the other channels **press the PREV key to move backward** or the **NEXT key to move forward** through all the channels.

The channels are: Power, Low Battery, Low Low Battery, Phone line status, each input channel and then the version of the firmware in the Scout.



Analog Channels

**Digital Channels
with Reports
turned on**

	What you do:	What the display shows:
Step 1	Press the 0 key.	
Step 2	<i>Primary power is being supplied.</i> Press the NEXT key.	<div style="border: 1px solid black; padding: 5px; width: fit-content;">Power normal</div>
	<i>Battery level is normal.</i> Press the NEXT key.	<div style="border: 1px solid black; padding: 5px; width: fit-content;">Low Batt normal</div>
	Through all channels...	
	<i>Digital 01 is in the alarm condition and is closed.</i> Press the NEXT key.	<div style="border: 1px solid black; padding: 5px; width: fit-content;">D01 <chan name> 1 alarm</div>
	<i>NOTE:</i> If the channel being viewed is an analog input or a digital input that has Reports enabled, there is additional information that can be seen by pressing the '0' key repeatedly. The additional information is: <i>Analog input</i>	
	<i>Alarm state</i>	
	<i>Low limit</i>	
	<i>High limit</i>	
	<i>Min since midnight</i>	
	<i>Max since midnight</i>	
		<i>Loop through remaining channels</i>
	DiaLog Scout version	<div style="border: 1px solid black; padding: 5px; width: fit-content;">Scout-RT SPLC V3.3</div>

Loop back to Step 1

NOTE: Press the # on the keypad to stop the System Status display.

7.2 Remotely

The System Status can be retrieved remotely by calling into the Scout from a phone.

The Scout will answer after the number of rings specified by Rings to Answer. Then the Scout will:

	What you do:	What the Scout says:
Step 1	Dial the DiaLog Scout phone number	Site ID Message (followed by any channels in alarm) <i>beep beep beep</i>
Step 2	Press the # key. (within 5 seconds)	“System ready. Enter selection.”
Step 3	Press 0	“System status.” The System Status report is spoken. “Enter channel number or press # to exit”
Step 4	Enter a channel number	Channel message “is normal/in alarm” “The present value is open/closed” or “The present value is xx.x ”
Loop back to Step 3 or enter # to exit		

8 Verifying Communication

When a channel is configured to read from a PLC or Modbus device, the Scout reads all channels every 1/2 second. If the Scout is not able to communicate correctly, the state of the Communication channel (05) will show an alarm.

NOTE: *If communication with a Modbus device is lost, the Communication channel will not go into alarm until the Alarm Delay period, which is defaulted to 10 seconds.*

To verify that the Scout is reading values correctly, look at the Status (0) of the Communication channel (05).

<p>Serial communication channel indicates that all communications is operating properly.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Comm norm</p> </div>
<p>Serial communication channel indicates that the communications with Modbus Slave ID 122 is not working.</p> <p>Potential causes are:</p> <ol style="list-style-type: none"> 1. The serial cable is disconnected. 2. The ID is not correct. 3. The Baud Bate is not correct. 4. The Register Type or Register Number are not correct. 5. The Max Idle it too low 6. The Response Timeout is too low 	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Comm in alm id: 122</p> </div>

If some channels are being read and others are not, check the Status for each channel to determine which are having problems.

<p>Input channel indicates that the channel is in alarm and there is a loss of communication.</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Chan xx <status> 0.00 ppm</p> </div>
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The <status> field switches between the alarm condition and a communication failure.

For example,
In alm and **Comm**

9 Listening In from a remote call

NOTE: This capability is ONLY available if the GSM SIM card supports voice calling. If the Scout is only being used to alarm via Antx Tracking, then this capability is not available.

The DiaLog Scout allows you to call into it from a phone and Listen-In on the noise around the Scout. This is typically used to determine if motors, pumps, fans, etc. are running.

	What you do:	What the Scout says:
Step 1	Dial the DiaLog Scout phone number	Site ID Message (followed by any channels in alarm) <i>beep beep beep</i>
Step 2	Press the # key (within 5 seconds)	“System ready. Enter selection.”
Step 3	Press the 5 key to enable Listen-In Press the # key during the 60 seconds.	The Scout’s microphone is turned on for 60 seconds. Disables Listen-In “System ready. Enter selection.”

10 Acknowledging alarms

NOTE: This capability is ONLY available if the GSM SIM card supports voice calling. If the Scout is only being used to alarm via Antx Tracking, then this capability is not available.

A channel goes into alarm when it transitions out of the normal condition specified in the Alarm State.

For example, if a channel has an Alarm State of Normally Open, then the channel goes into alarm when the input closes. The channel will stay in alarm as long as the input is closed. If the Alarm Type is set to Latching, then it will stay in alarm, even if the input goes back to open, until the channel is acknowledged.

When any channel goes into alarm and the Channel Mode is set to Call on Alarm, the Scout will start calling the phone numbers in the Phone List. It will continue to call through the list of phone numbers until the channel goes out of alarm or until it is acknowledged.

When acknowledged, the Scout will stop calling and wait the time specified by the Ack Redial Delay before starting to call again if the channel is still in the alarm condition.

10.1 Acknowledge from the keypad

While in RUN mode, press the ACK key.

The Scout will change the display information for the channel(s) in alarm from Alarm to Acknowledged and stop calling.

10.2 Acknowledge remotely when called from the Scout

NOTE: This capability is ONLY available if the GSM SIM card supports voice calling. If the Scout is only being used to alarm via Antx Tracking, then this capability is not available.

The Scout calls the phone numbers programmed into the Phone List beginning with the first position. If the call is busy, the Scout will go to the next number.

	What you do:	What the Scout does:
Step 1		Calls next phone number.
Step 2		Waits time specified by the Call Progress Delay for that phone number.
Step 3		Says: Site Message ID Channel Message ID "is in alarm" "please acknowledge"
	You have 5 seconds to press the 9 key to acknowledge the alarm.	
	If you do not acknowledge, loop back to Step 3 the number of times specified by Msg Repeat	
	If you do acknowledge	"Channel acknowledged." <i>beep beep beep</i>
		NOTE: <i>After all the channels have been spoken, the Scout will give you three (3) beeps. You have 5 seconds to press the # key if you wish to continue.</i>
	If you do not press the # key.	"Good-bye"

11 Arming and Disarming

At times it may be beneficial to Disarm the Scout to prevent it from calling out. This is generally done when you are performing maintenance on equipment being monitored and do not want unnecessary alarms generated.

NOTE: When the Scout is disarmed, all scanning of I/O stops. You can manually write to coils and holding registers either locally or remotely.

11.1 From the front panel

NOTE: The Scout must be in the RUN mode

	What you do:	What the display shows:
Step 1	Press the 2 key to toggle between Armed and Disarmed.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Run Mode 03:04:07 armed </div>
	NOTE: If the Scout is Disarmed, it automatically re-Arms after 30 minutes.	

11.2 Remotely

NOTE: This capability is **ONLY** available if the GSM SIM card supports voice calling. If the Scout is only alarming via Antx Tracking, this capability is unavailable.

You can Arm or Disarm the Scout when you call into it.

	What you do:	What the Scout says:
Step 1	Dial the DiaLog Scout phone number	Site ID Message (then any channels in alarm) <i>beep beep beep</i>
Step 2	Press the # key within 5 seconds <i>If an Access Code has been activated, you will be requested to enter it.</i>	“System ready. Enter selection.”
Step 3	Press 2 to toggle between arm/disarm.	“System is armed/disarmed” “Return to arm in 30 minutes” “System ready. Enter selection.”
Loop back to Step 2		

12 Writing Digitals and Analogs

Digital (Coils) and Analog (Holding Registers) can be written to manually either locally from the keypad or remotely over a phone. Both of these functions are activated by pressing the 7 key.

If the coil is also controlled via a digital or analog channel going into alarm, the coil will perform the programmed function in addition to any manual operations.

12.1 From the front panel

NOTE: The Scout must be in the RUN mode

	What you do:	What the display shows:
Step 1	Press the 7 key to see the Set Outputs selection screen. Enter the channel number for the Digital (Coil) or Analog (Holding) Register.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Set Outputs 1-Dig 2-Ana = </div>
If the Channel number is an Analog, go to Step 4.		
Step 2	Select the Digital channel to control.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Set Digital 1-16 = </div>
Step 3	The channel is a Digital . Enter 0 to deactivate the digital (coil) or 1 to activate. NOTE: <i>Once the command has been accepted, the value to the far right of will be the actual read back value of the digital.</i> <i>Therefore, if the command entered was a '1' to activate and the display shows '0', the digital was not set and there may be a communication problem.</i>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <channel name> 0-off 1-on = 0 </div>
Loop back to Step 1		

<p>Step 4</p>	<p>Select the Analog channel to control.</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Set Analog 1-8 =</p> </div>
<p>Step 5</p>	<p>The channel is an Analog. The value xx.xx represents the last value read back from this analog.</p> <p>For example (assume 2 decimal places): You enter: Set = 5629# If the write was successful, 56.29 will be displayed as the value read back from this analog.</p>	<div style="border: 1px solid black; padding: 5px;"> <p><channel name> Val = ±xx.x</p> </div>
	<p>You may now enter a new value for this analog. The value is entered as 1 to 5 consecutive numbers.</p> <p>If the pound key is pressed and no numbers have been entered, the system returns to prompt for an output channel number. When the # key is pressed, the number is rewritten showing the decimal point location.</p> <p>If this value is correct, press the pound key to write the new value to the holding register. If the value is not correct, hit any key except the pound key to abort this entry and reenter a new value.</p>	
<p>Loop back to Step 1</p>		

12.2 Remotely

NOTE: This capability is *ONLY* available if the GSM SIM card supports voice calling. If the Scout is alarming via Antx Tracking, then this capability is not available.

You can activate or deactivate the relay when you call into the Scout or when the Scout has called you during an alarm notification.

	What you do:	What the Scout says:
Step 1	Dial the DiaLog Scout phone number	Site ID Message (followed by any channels in alarm) <i>beep beep beep</i>
Step 2	Press the # key within 5 seconds <i>If an Access Code has been activated, you will be requested to enter it.</i>	“System ready. Enter selection.”
Step 3	Press 7 to listen to the Output Channels prompt.	“Output Channels. ” “Enter channel number or press # to exit.”

If the Channel number is a Holding Register, go to Step 6.

Step 4	Enter channel number. For a write coil channel	Recorded channel message or “Relay output channel nn” “Relay is energized/de-energized” “Enter new selection”
Step 5	Press 1 to activate the relay or 0 to deactivate the relay. The new state of the coil is the read back to you. Press the pound key to return to the channel prompt.	“Relay is energized (or deenergized)” “Enter new selection or press # to exit.”

Loop back to Step 1

Step 6	Enter channel number. For a write holding channel	“Analog output channel nn” “The present value is xx.xx” “Enter new value or press # to exit”
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Step 7	Enter a new value. For example, 5678#	“The new value is 56.78” “Press # to enter “Enter new value or press # to exit.”
Step 8	If this value is correct, press the pound key to write the value to the holding register. <i>NOTE: If the value is not correct, hit any other key to abort this entry and reenter a new value. If the entry is aborted the system says “No Entry”.</i>	“The present value is 56.78” “Press # to enter “Enter new value or press # to exit.”
Loop back to Step 1		

13 Retrieving the Event Log

The DiaLog Scout keeps the last 100 events that occurred in a local non-volatile log. The Event Log can be viewed locally on the display or retrieved remotely over the phone.

The **PREV** moves backwards and the **NEXT** moves forwards through the logs.

13.1 To view the Event Log locally

	What you do:	What the display shows:
Step 1	Press the 1 key to enter Program Mode	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Program Mode 0-9 = </div>
Step 2	Press the LOG (5) key	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> View Log 0-Evt 1-Data = </div>
Step 2	Press 0 to view the Event Log Press 1 to view the Data Log	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> 1) PROG Mode date time </div>
Step 3	Press the NEXT key to advance forward through the Event Log or the PREV key to move backward. Press the # key when you are finished.	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> 2) DIN3 Cl Alm date time </div>
Press # when finished		

13.2 To retrieve the Event Log remotely

NOTE: This capability is ONLY available if the GSM SIM card supports voice calling. If the Scout is only being used to alarm via Antx Tracking, then this capability is not available.

The Event Log can be retrieved remotely via a phone call in to the DiaLog Scout.

	What you do:	What the Scout says:
Step 1	Dial the DiaLog Scout phone number	Site ID Message (followed by any channels in alarm) <i>beep beep beep</i>
Step 2	Press the # key (within 5 seconds)	“Enter selection.”
Step 3	Press the 6 key.	“Event log start” “Type is ##” “Date is xx xx” “Time is xx xx xx”
Step 4	Press the 1 key to move to the next event, press the 0 key to move to the previous event. NOTE: <i>if the Date or Time is the same as the previous event, then the Date or Time will not be repeated.</i> NOTE: <i>the Scout will say “Event log end” prior to the type of the last entry in the event log.</i>	“Type is ##” “Date is xx xx” “Time is xx xx xx”
Loop back to Step 4 or press # to exit.		

Event #	Event Description	Event #	Event Description
0	NULL Event	42	GSM unsolicited reg event
1	Power On	43	GSM result of +CFUN cmd
2	Dead Task with task number	44	GSM attach to network
3	System Armed	45	GSM has reset
4	Armed	46	Pager call
5	RUN Mode	47	Phone check Telco/GSM
6	PROGram Mode	48	Sending SMS msg
7	Configuration Change	49	Sending e-mail msg
8	Reset to System Defaults	50	Sending GPRS UDP/PAD msg
9	Call Answered	51	Receiving SMS msg with cmd
10	No Dial Tone	52	Railed to execute SMS cmd
11	Call Busy	53	Automatic update call out
12	Call Error	54	Reset DIN run limit
13	Call Aborted	55	Reset DIN starts
14	Call Timeout	56	Reset AIN totals
15	Call No Answer	57	Write Holding
16	Call Incoming	58	Receive DTMF tone
17	Call Complete	59	Comm OK
18	Voice Call	60	Comm Fail
19	Data Call	61	Set notify
20	Alarms acknowledged locally	62	Clear notify
21	Alarms acknowledged remotely	63	Normal GPRS call
22	Alarm call / phone position	64	Between calls timer state
23	Open alarm / digital channel number	65	Time has been set
24	Closed alarm / digital channel number	66	GPS fix (1-valid,0-invalid)
25	Run time alarm / digital channel number	67	Midnight data posting to AT
26	Starts alarm / digital channel number	68	GSM modem lockout start
27	Low alarm / analog channel number	69	GSM modem lockout active
28	High alarm / analog channel number	70	GSM modem lockout end
29	Totalization alarm / analog channel number		
30	Channel is normal / channel number		
31	Channel acknowledged / channel number		
32	Relay channel on / channel number		
33	Relay channel off / channel number		
34	Normal data value for channel		
35	Starts data for digital channel		
36	Run time data for digital channel		
37	Totalizer data for analog channel		
38	Maximum value for analog channel		
39	Minimum value for analog channel		
40	Send status report		
41	Send events report		
42	Unknown		

14 Antx Tracking Event Codes

When a channel goes into or out of alarm, an event code is automatically sent to the Antx Tracking system. Additionally, a scheduled update is sent to Antx Tracking based on the update frequency defined in the Scout.

Event Number	Definition
471	Alarms Acknowledged
472	Acknowledged last message sent from Antx Tracking
473	Not acknowledged last message sent from Antx Tracking
474	Update message sent from Scout
101	Primary power alarm
104	Power normal
105	Modbus communication alarm
201 - 216	Digital input 1-16 run time alarms
251 – 266	Digital input 1-16 starts alarms
301 – 316	Digital input 1-16 back to normal
351 – 366	Digital input 1-16 in alarm
480	Daily digital starts counter
481	Daily digital run durations
482	Daily analog totals
601, 611...671	Analog input 1-8 low alarm
602, 612...672	Analog input 1-8 high alarm
603, 613...673	Analog input 1-8 normal
604, 614...674	Analog input 1-8 totalizer alarm
605, 615...675	Analog input 1-8 failsafe alarm (open-loop detection)

15 Replacing the Backup Battery

The Backup Battery is continually monitored by the Scout to confirm that it is supplying enough power to run the Scout. If it is not, then the Low Battery (02) alarm will be activated.

This alarm is caused by:

1. the Scout has lost Primary Power, is running on the battery and is low on power, or
2. the battery cannot be recharged, which should take 6-12 hours.

The Backup Battery is located inside the enclosure. You will have to remove the front panel from the enclosure to expose the battery.

Battery replacement procedure	
Step 1	If panel mounted, dismount the enclosure by loosening the screws holding the enclosure to the panel.
Step 2	Remove the four (4) nuts that hold the front cover to the enclosure.
Step 3	Slowly tilt the top edge of the front cover away from the enclosure to expose the cable connecting the electronics to the battery.
Step 4	Put the front cover in a safe place and remove the battery bracket and battery.
Step 5	Put the new battery in the bracket with the leads facing the left-hand side of the enclosure.
Step 6	Reattach the battery cable and front cover.
Step 7	Mount the enclosure back in place.

NOTE: *be careful when removing the front panel as it holds the electronics and there is a cable between the electronics and the battery.*

16 Customer Service

Antx customer service can be reached toll-free at 877-686-2689.

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Austin, TX 78720
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custserv@antx.com

17 FCC Registration

The Federal Communications Commission (FCC) has established rules that permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin lines.

If this device is malfunctioning, it may also be causing harm to the telephone network. This device should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the telephone company may temporarily disconnect service.

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.

If the telephone company requests information on what equipment is connected to their lines, inform them of:

- a. The telephone number this unit is connected to
- b. The ringer equivalence number: 0.2B
- c. The USOC jack required
- d. The FCC registration number: 60DAL02BSCOUT

Items b and d are indicated on the label.

The ringer equivalence (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the REN's of all devices on any one line should not exceed five. If too many devices are attached, they may not ring properly.



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