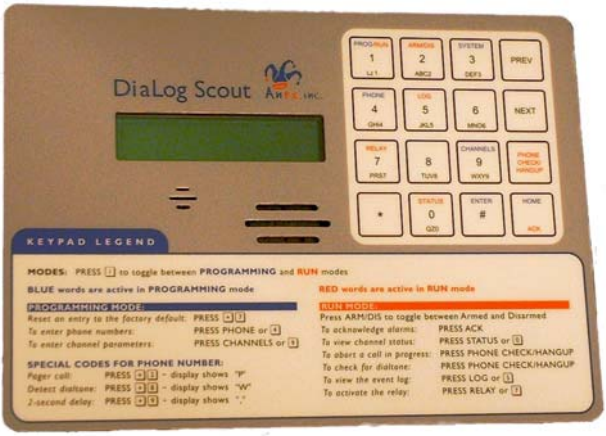
DiaLog Scout

Remote monitoring and
alarm notification system



User's Manual

Version 6.02
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1 Introduction

The DiaLog Scout DSxx is the most user-friendly and reliable remote monitoring and alarm notification system available. Mounted in an industrial aluminum or NEMA 4X enclosure, the Scout provides simple programming either locally through the integral keypad and display or remotely via a phone call.

Installation is made easy, whether the Scout is installed in a panel or in a door. All wiring connections are made through quick disconnect-type connectors, making it fast and simple.

1.1 General Operation

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 8 dry contact and up to 4 analog inputs continuously and can control up to 2 relays. When any one of the inputs changes from the normal condition to the alarm condition, the DiaLog Scout starts calling the first of up to 8 phone numbers to deliver the user recorded alarm message.

When alarms are acknowledged from the keypad, when a person is called or by a person calling in, no further calls are made unless another channel goes into alarm or the Redial After Acknowledge timer expires.

This manual is applicable to firmware versions X.X and later for models from DS2 through DS14.-

1.1.1 Acknowledging Alarms

Alarms are acknowledged remotely by pressing the '9' key on your phone keypad. The Scout tells you that the channel has been "acknowledged".

Locally, alarms are acknowledged by pressing the ACK key while in RUN mode.

1.1.2 Controlling Relays on other Scouts

Scout units configured with GSM cell phones can perform relay output control to other Scout-RT SPLC units which are also configured with GSM cell phones.

Control is performed via a secure SMS messaging protocol between the Scouts. Up to 4 individual Scout-RT SPLC units can be used for control.

2 Installation

You can mount the DiaLog 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. **The depth of the enclosure is 3.60 inches.**

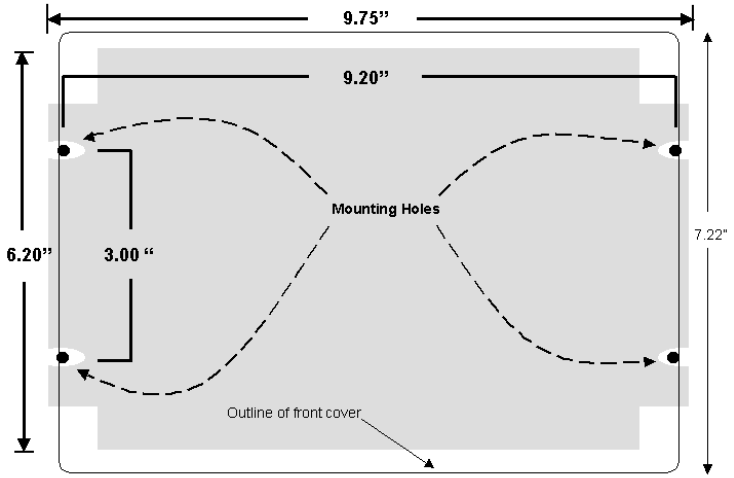


Figure 1 Panel Mount mounting holes

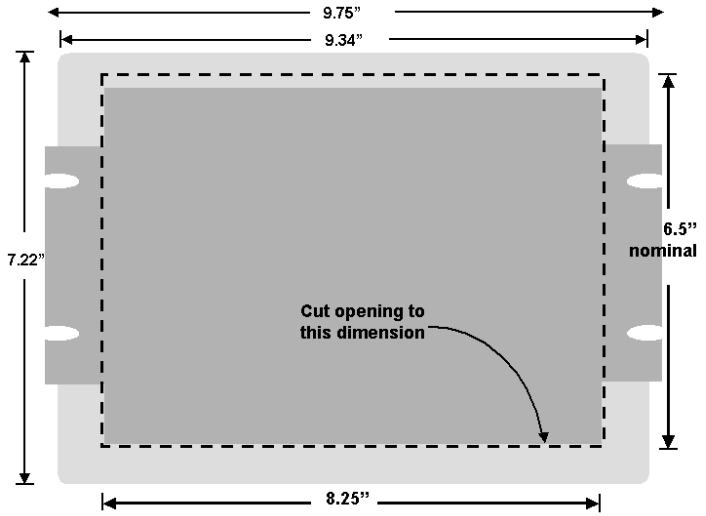
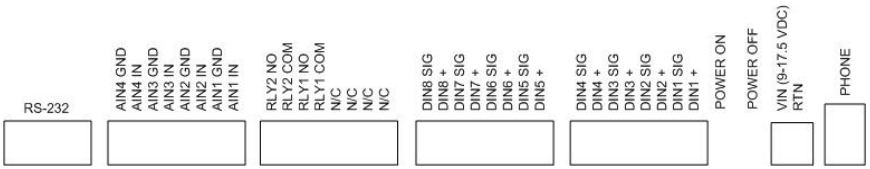
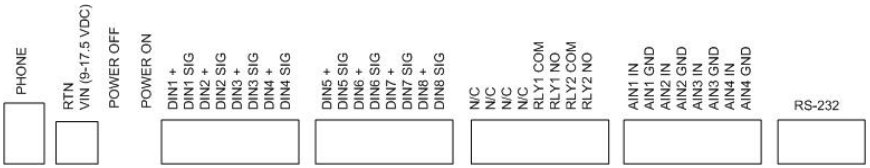


Figure 2 Flush Mount cut-out dimensions

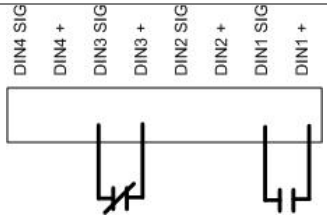
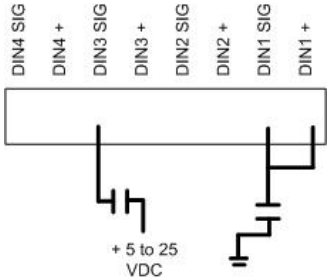
The connectors for Primary Power, Phone and I/O use quick disconnect plugs. The diagram below shows the location of these connections for the **NEMA 4X enclosure** or the **aluminum enclosure** when viewed from the back.

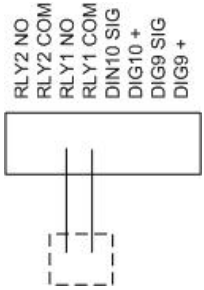
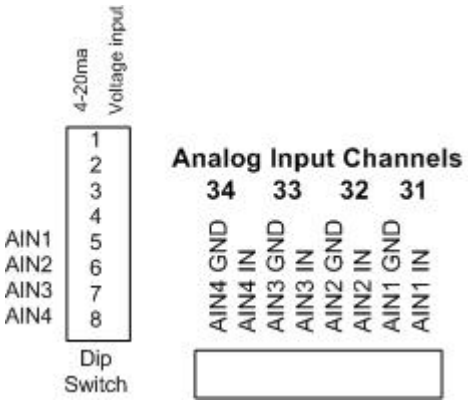


The drawing below shows the connections for the **aluminum enclosure** when wiring from the front.



Connection point	Function
Phone	Connect the included phone cord. **WARNING**: *A solid connection to Earth Ground must be provided to validate the warranty.*
Power	Connect the included power connection from the wall-mount power supply to the Scout. Be sure to attach the green ground wire to an earth ground connection point.
On/Off	To supply power to the Scout, flip the switch. The Scout will power up and the display will read "DiaLog Scout".
Digital Inputs	**For Dry Contacts**: Connect from the 'DIN+' to one side of your dry contact and connect from the DIN# SIG to the other side of your contact. *For example*, DIN1 below is connected to a normally open contact and DIN3 is connected to a normally closed contact.

Connection point	Function
	
Digital Voltage and Ground Inputs	**For Voltage inputs up to 25 VDC:** Connect the positive voltage of your input to the DIN# SIG input on the Scout. *For example*, DIN3 below is connected to a voltage input.  **NOTE:** *Do not connect anything to the '+' input* **NOTE:** *If the grounds are not already common between your device and the Scout, connect the "-" signal of the Scout power supply to a signal ground on your device.* **For Contacts that Close to Ground:** Jumper the DIN# '+' and DIN# SIG input together. Connect another wire from the DIN# SIG input to the contact that will close to ground. **NOTE:** *Set the channel to Normally Closed*
Relay Output	**Normally Open .5A relay output:** Connect your device or another interposing relay to the 2 contacts of the relay.

Connection point	Function
	
Analog Inputs	**For Voltage inputs up to 5 VDC:** Set the Dip Switch for the desired channel to the left, which specifies the input is a voltage input. Wire the ground or (-) input to the AIN# GND contact. Wire the voltage or the (+) to the AIN# IN contact. **For Current inputs up to 20ma:** Set the Dip Switch for the desired channel to the left, which specifies the input is a 4-20ma input. 

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 On position. The Scout will start its power up diagnostics.

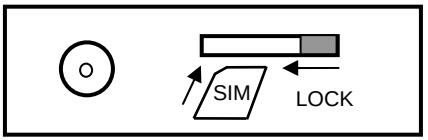
Upon completing the power up diagnostics, the Scout will be in Program Mode.

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

2.2 SIM card installation on a GSM phone

If the Scout is equipped with an internal GSM cell phone, a GSM SIM card must be installed for the Scout to make calls out. The SIM card is installed in a slot on the side of the GSM phone.

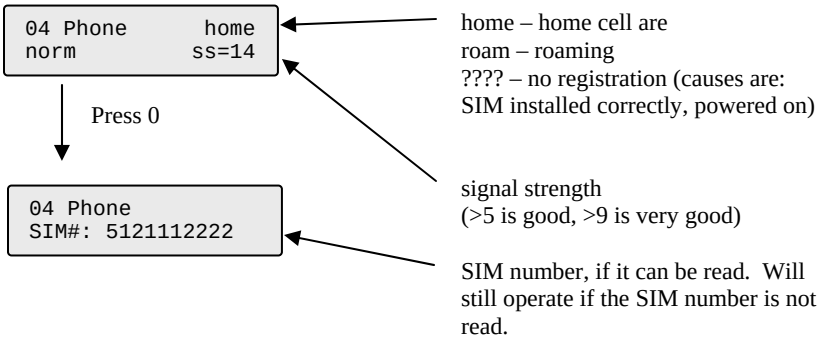
The card is installed with the circuit facing down. Be sure to LOCK the SIM card in place.



2.3 GSM signal strength and registration

The GSM signal strength and registration can be viewed from the Status screen.

Press the STATUS (0) key from either Run or Program mode. Press the NEXT key until the 04 Phone channel status is displayed.



2.4 Connecting to Serial Port 2 for Modbus

Serial port 2 can be used to communicate to Modbus devices.

Physically, you can connect to serial port 2 via RS-232 using the cable that has a DB9 on one end and a 2x5 rectangular connector on the other. This cable attaches to the Scout board at location J1 on the far left-hand side of the board.

Optionally, you can connect via RS-485 using the 3-position terminal block located at J6, next to the J1 connector. This provide A, B and Ground to be used for RS-485.

You must configure Serial Port 2 from the System menu. Set the port to Master with the appropriate baud rate.

3 Programming from the keypad

The DiaLog 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 phone numbers and put the Scout into the RUN mode.

In more complex applications, you can program individual messages for each channel being monitored, adjust the amount of time channels must be in the alarm condition before starting the callout sequence and enter phone and pager numbers for alarm notification.

When programming, all prompts are displayed. To navigate the menu:

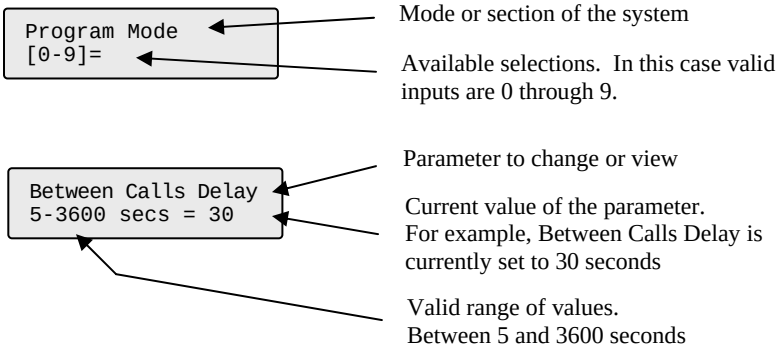
Key	Function	Key	Function
ENTER	Accept the current entry or move to next option	PREV	Moves to the previous selection in a menu
HOME	Go to the top of the Menu (HOME)	NEXT	Moves to the next selection in a menu
*7	Reset the value back to the factory default		

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.*

NOTE: *The Scout automatically returns to RUN mode after 30 minutes.*

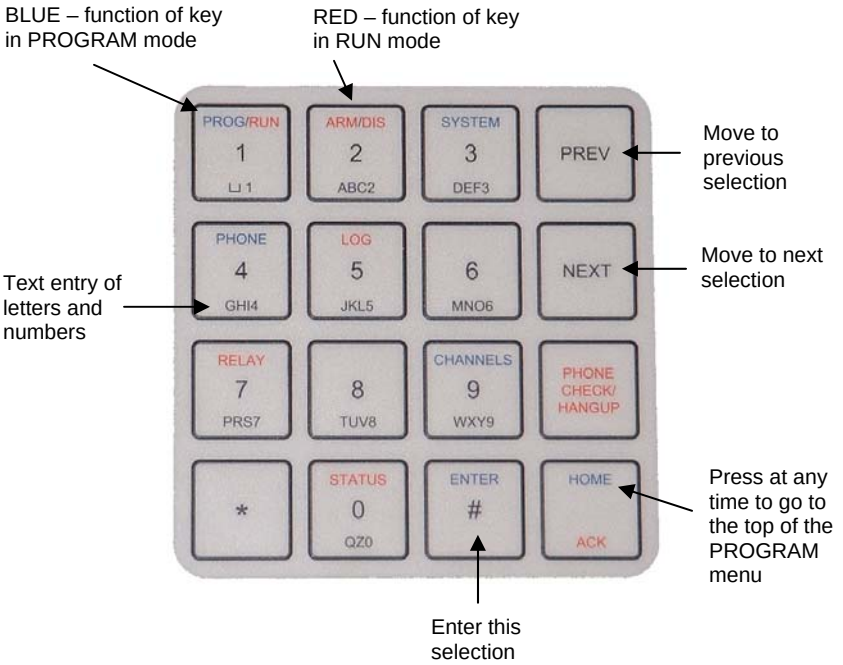
NOTE: *Configuration changes are only saved to non-volatile memory when RUN mode is activated*

3.1 How to Read the Menus



3.2 How to use the Keypad

The DiaLog 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:



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				

NOTE: *To switch between Upper and Lower case, press the PHONE CHECK key. If Upper case is active, an UP ARROW is shown on the right-hand side of the display.*

3.4 Programming Menu Structure

1	**Toggle between Run and Program Modes**
3	**System Setup**
	Site ID message
	Site Name
	Numeric ID
	Keypad Sensitivity
	Access Code
	Audio Volume
	Speaker Mode
	Rings to Answer
	Set Date/Time
	For GSM cellular (Auto, Manual)
	Reset Configuration to factory default or user-saved configuration
	Reset Run Data
	Reset Event Log
	Reset Data
4	**Phone Setup**
	Message Repeat
	Phone Position (1-8)
	Call Type
	Phone Number or e-mail address
	Next Call Delay
	Call Progress Delay
	Notify Once
	Control Phone Position (1-4)
	Phone Number of Remote Scout-RT SPLC
	Next Call Delay
9	**Channel Setup**
	Channel Number
System	Channel Mode
	Alarm Delay
	Redial Delay
	Alarm Type
	Alarm Relay

9 Channel Setup

Digital	Channel Message
	Channel Name
	Reports
	Normal State
	Channel Mode
	Alarm Delay
	Alarm Type
	Alarm Relay
	Run Limit
	Control Phone
	Remote Relay Number
	Relay State when in Alarm
	Relay State when in Normal

Relay	Channel Message
	Channel Name
	Pulse Duration

Analog	Channel Message
	Channel Name
	Reports
	Input Type
	Decimal Position
	Engineering Units
	Channel Mode
	Input Scaling
	Minimum Counts
	Maximum Counts
	Zero
	Full Scale
	Alarm Delay
	Alarm Type
	Alarm Relay
	Low Alarm Limit
	High Alarm Limit
	Control Phone
	Remote Low Relay Number
	Relay State in Low Alarm
	Relay State in Normal
	Remote High Relay Number
	Relay State in High Alarm
	Relay State in Normal

3.5 Programming System Settings

System settings are generally programmed once during the initial setup of the Scout.

	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 *Enter Access Code if requested.*	**NOTE:** *If an Access Code has been programmed, the Scout will show a screen to enter it.*
Step 3	The pre-recorded Site Message is spoken. 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 then press the # key. **NOTE:** *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.*	`Recording. . .` `Press # to stop`
Step 4	The Site Name that will display on a pager is shown. Press # to keep the current value or enter a new value then press the # key.	`Site Name` `nnnnnnnnnnnnnnnnnn`
Step 5	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.	`Numeric ID` `nnnnnnnnnnnnnnnnnn`
Step 6	Used to adjust how long a key needs to be pressed to be recognized. 1=short **NOTE:** *if spurious keys are being picked up from nearby RF generation equipment, try a higher number*	`Keypad Sensitivity` `1-5 = 1`

	What you do:	What the display shows:
Step 7	Press # if OK or enter a new 4-digit Access Code.	`Access Code` `nnnn`
Step 8	The Audio Volume can be adjusted to be louder (up) or softer (down). Press # when you have the level you desire. (7 is maximum volume)	`Audio Volume` `0-dec 1-inc = 4`
Step 9	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	`Speaker Mode` `0-2 = On+Monitor`
Step 10	Rings to Answer is the number of times the Scout detects an incoming ring before it answers. Press # if OK or enter a new value as nn (e.g. 03 for 3)	`Rings to Answer` `1-20 = nn`
Step 11	Set the time and date as needed. Press 1 to set the time. **NOTE:** *24-hour clock.* **NOTE:** *If this is a GSM unit, you are asked to set it manually or automatically. Automatically will only work if the SIM card supports GPRS (data) communication, NOT if it only supports voice.*	`Set Date/Time` `1-set =`
Step 12	Reset Config sets the unit back to the factory default values. Press 0 or # to keep your programming or 1 to reset back to the factory defaults. **NOTE:** *The Scout has a separate storage area to Backup or Restore configuration settings. To access this, press 9 then enter the Access Code **2689.*	`Reset Config` `1-rst =`

	What you do:	What the display shows:
Step 13	Reset Run Data clears the Run-time logs for a specific channel.	`Reset Run Data` `Chan 1x-3x =`
Step 14	Reset Event Log clears the Event log	`Reset Event Log` `1-rst =`
Step 15	Reset Data clears the Data Log for a specific channel.	`Reset Data` `1-rst =`

3.6 Programming Phone Settings

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

	What you do:	What the display shows:
Step 1	Press the 1 key for PROGRAM mode. *Enter Access Code if requested.*	`Program Mode` `0-9 =` **NOTE:** *If the Scout is in RUN mode and an Access Code has been programmed, the Scout will show a screen to enter it.*
Step 2	Press 4	
Step 3	Msg Repeat is the number of times the alarm message will be repeated when an alarm call is made.	`Msg Repeat` `1-20 = nn`
Step 4	There are 8 phone numbers that can be entered in the Scout. These are processed in order from 1 to 8. Enter the position of the phone number you want to check or modify. Press # if you do not want to change any phone numbers. See Section 3.3 How to Enter Text for Names for specific details.	`Enter Phone Pos` `1-8 =`
Skip to Step 6 if the Scout does NOT have a GSM cell phone with SMS messaging enabled		
Step 5	Enter a call type 1 Voice/Pager 2 SMS Text 3 Email	`Pos 1 Call Type` 1-3 = 1 Voice/Pager

	What you do:	What the display shows:
Step 6	For phone and SMS messages: The phone number in the position specified is shown. Press # if OK or enter a new phone number. **NOTE:** *Number can be 25 digits.* **2* — *For a pager call* **7* — *Deletes phone number* **8* — *Detects a dialtone* **9* — *2-second delay* **** — *for a '*'* **#* — *for a '#'* (e.g. 5124442233P would call a pager at 5124442233) For e-Mail – enter the e-mail address to receive the message. See Section 3.3 How to Enter Text for Names for specific details.	`Ph Num: 1234567890` `E:sales@antx.com`
Step 7	The amount of time to wait before calling the next number in the list.	`Pos 1 Next Call Dly` `5-3600 secs = nnnn`
Step 8	Time the Scout waits after issuing the last digit in the phone number before issuing the alarm message. **NOTE:** *0 means Call Progress is enabled. The Scout will call and wait until the phone has been answered before the alarm message is delivered.* *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.*	`Pos 1 Call Prog Dly` `0-60 secs = nn`
Step 9	If Notify Once is Disabled, then this number is included in the call sequence until the call has been acknowledged. If Notify Once is Enabled, then this number is only called once, regardless of the alarm being acknowledged.	`Pos1 Notify Once` `0-1: Disabled`

Loop back to Step 4 if you are NOT doing remote relay control

	What you do:	What the display shows:
Step 10	If this Scout has a GSM cellphone and you are going to be controlling remote relays on another Scout-RT SPLC unit, there are 4 available phone positions for the communicating with the remote Scout.	`Control Phone Pos 1-4 = -1`
Step 11	Enter the phone number of the remote Scout-RT SPLC. SMS text messages will be sent and received to perform the control desired.	`Ph Num: <SMS ph #>`
Step 12	The amount of time to wait before calling the next number in the list.	`Pos 1 Next Call Dly 5-3600 secs = nnnn`
Loop back to Step 4		

3.7 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

3.8 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.

3.8.1 System Channel Setup

Model	System channel numbers
All	01 – Primary power 02 – Low battery 03 – Low low battery 04 – Phone fault

	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 9 (or CHAN)	
Step 3	Enter the Channel Number that you wish to examine or program. Press # or PREV to back-up the menu.	`Enter Chan Number` `0x,1x,2x,3x =`
Step 4	Channel Mode is set to 1 for Call on Alarm conditions or 0 for Status Only. Press # or NEXT if the value is OK.	`Chan 01 Mode` `0-2 = 2 Alarm`
Step 5	The Alarm Delay specifies the amount of time the input must be in the alarm condition before a call-out begins.	`Chan 01 Alarm Delay` `0-65535 sec = nnnnn`
Step 6	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.	`Chan 01 Redial Delay` `1-168 hrs = 1`
Step 7	The Alarm Type allows the alarm to track the input signal or latch. **0 (normal)** the alarm condition tracks the input signal in and out of alarm. **1 (latch)** once an alarm condition occurs it continues to call until the channel is acknowledged EVEN IF the input has returned to the normal condition. Press # or NEXT if the value is OK.	`Chan 01 Alarm Type` `0-norm 1-latch = 0`

Loop back to Step 3 if no relay is installed

	What you do:	What the display shows:
Step 8	Enter 1 to Activate the Relay when the channel goes into alarm or 0 to not activate. The relay will follow the channel into and out of alarm.	`Chan 01 Alarm Relay` `0-no 1-yes = 0`
Loop back to Step 3		

3.8.2 Digital Channel Setup

Model	Digital channel numbers
DS2	11 through 12
DS4 and DS5	11 through 14
DS8, DS9, DS11 and DS13	11 through 18

	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 9 or CHAN	
Step 3	Enter the Channel Number that you wish to examine or program. Press # or PREV to back-up the menu.	`Enter Chan Number` `0x,1x,2x,3x =`
Step 4	The Scout repeats the current message. If the message is OK, press # or NEXT. To record a new message, press 1 and speak your new 6-second message into the microphone followed by the # key. To listen to the current message again, press 0.	`Chan 11 Msg` `0-play 1-rec =`
Step 5	Each channel can have a 16 character name that will be displayed whenever the Status is shown or a channel is in alarm. To enter the name, press the key that corresponds to the letter or number that you want. To move to the next character, wait 1 second between entries.	`Chan 11 Name` `nnnnnnnnnnnnnnnnn`
Step 6	**1** to compute the number of times this channel has gone from Normal to non-Normal and the total time that the channel in is the non-Normal state. This is typically used to compute motor cycles and run time. **NOTE:** *No alarms are created for channels with Reports set to On.*	`Chan 11 Reports` `0-off 1-on = 0`

	What you do:	What the display shows:
Step 7	**0** for normally open **1** for normally closed. **NOTE:** *An alarm occurs when the input transitions out of the 'normal' state.*	`Chan 11 Normal State` `0-n/o 1-n/c = 0`
Step 8	The Channel Mode should be set to 2 for Call on Alarm conditions or 1 for Status Only, 0 to Disable.	`Chan 11 Mode` `0-2 = 2 Alarm`
Step 9	Time the input must be in the alarm condition before a call-out begins.	`Chan 11 Alarm Delay` `0-65535 sec = nnnnn`
Step 10	The amount of time after the channel has been acknowledged before another call is made if the channel is still in the alarm condition.	`Chan 11 Redial Delay` `1-168 hrs = 1`
Step 11	**0 (normal)** indicates the alarm condition follows the input signal in and out of alarm. **1 (latch)** indicates once an alarm condition occurs it continues to call until the channel is acknowledged EVEN IF the input has returned to the normal condition.	`Chan 11 Alarm Type` `0-norm 1-latch = 0`

Skip to Step 13 if no relay is installed (DS2, DS4, DS8) of if this Scout has a GSM cellphone

Step 12	**1** to activate the relay when the channel goes into alarm **0** to not activate. Relay follows channels in/out of alarm.	`Chan 11 Alarm Relay` `0-no 1-yes = 0`
Step 13	The Starts Limit is an alarm limit on the number of times that the channel has been in the non-Normal condition. e.g. to call out when a motor has started a pre-determined number of times.	`Chan 11 Start Limit` `0-999999 = disabled`
Step 14	The Run Limit is an alarm limit on the total time that the channel is in the non-Normal condition. e.g. to call out when a motor has run for a pre-determined number of minutes.	`Chan 11 Run Limit` `0-999999 = disabled`

Loop back to Step 3 if this is NOT a GSM cell-phone unit

	What you do:	What the display shows:
Step 15	The Control Phone Position specifies the SMS phone number of the remote Scout-RT SPLC that is called to turn relays on and off.	`Chan 11 Cntrl Phone` `1-4 = -1`
Step 16	The Remote Relay is the relay number in the remote Scout-RT SPLC that is being called.	`Chan 11 Remote Relay` `11-26 = 0`
Step 17	The Alarm State is the state to change the remote relay to when this channel goes into the alarm state. (0 = open, 1 = closed, 2 = static)	`Chan 11 Alarm State` `0-2 = 1 Close`
Step 18	The Normal State is the state to change the remote relay to when this channel goes back into the normal state.	`Chan 11 Normal State` `0-2 = 0 Open`
Loop back to Step 3		

3.8.3 Relay Channel Setup

Model	Relay channel number
DS9, DS11, and DS13	21

	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 9	
Step 3	Enter the Channel Number that you wish to examine or program. Press # to back-up the menu.	`Enter Chan Number` `0x,1x,2x,3x =`
Step 4	The Scout repeats the current message. If the message is OK, press #. To record a new message, press 1 and speak your new 6-second message into the microphone followed by the # key. 0 to listen to the current message again.	`Chan 21 Msg` `0-play 1-rec =`
Step 5	Each channel can have a 16 character name that will be displayed whenever the Status is shown or a channel is in alarm. To enter the name, press the key that corresponds to the letter or number that you want. To move to the next character, wait 1 second between entries. Press # key when finished.	`Chan 21 Name` `nnnnnnnnnnnnnnnn`
Step 6	The Pulse Duration specifies the length of time relay will stay activated. If you specify 0, then the relay will deactivate when all channels that reference it are in the normal condition.	`Chan 21 Pulse Dur` `0-86400 sec = nnnnn`
Loop back to Step 3		

3.8.4 Analog Channel Setup

Model	Analog channel numbers
DS11	31 through 32
DS13	31 through 34

	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 9	
Step 3	Enter the Channel Number that you wish to examine or program. Press # to back-up the menu.	`Enter Chan Number` `0x,1x,2x,3x =`
Step 4	The Scout repeats the current message. If the message is OK, press #. To record a new message, press 1 and speak your new 6-second message into the microphone followed by the # key. To listen to the current message again, press 0.	`Chan 31 Msg` `0-play 1-rec =`
Step 5	Each channel can have a 16 character name that will be displayed whenever the Status is shown or a channel is in alarm. To enter the name, press the key that corresponds to the letter or number that you want. To move to the next character, wait 1 second between entries. Press # key when finished.	`Chan 31 Name` `nnnnnnnnnnnnnnnnn`
Step 6	Set the Channel Reports to on (1) to compute the number of times this channel has gone from Normal to non-Normal and the total time that the channel in is the non-Normal state. This is typically used to compute motor cycles and run time.	`Chan 31 Reports` `0-off 1-on = 0`

	What you do:	What the display shows:
Step 7	The Input Type is: 0 – 0-5V 1 = 1-5V 2 = 0-20ma 3 = 4-20ma *If you are using a current input, install the supplied precision resistor.*	`Chan 31 Input Type` `0-3 = 0 0-5V`
Step 8	The Decimal Position is the number of digits to the right of the decimal point when converted into engineering units. For example, if the desired value is 12.5 psi, then you would enter 1.	`Chan 31 Dec Pos` `0-6 = 2`
Step 9	The Engineering Units field has the following options: 0 none 10 degF 1 pct 11 inches 2 ppm 12 meters 3 gals 13 kmeters 4 gpm 14 liters 5 gph 15 kliters 6 ft 16 grams 7 rpm 17 kg 8 psi 18 lbs 9 degC	`Chan 31 Eng Units` `0-18 = 0 none`
Step 10	The Zero specifies the engineering unit value at the lowest input level. **NOTE:** *Press ** to toggle between positive and negative.* For example, if the input is a 4-20ma signal, then this is the engineering unit value at 4ma with the specified decimal point position.	`Chan 31 Zero Scale` `+/-999999 = 0`
Step 11	The Full Scale specifies the engineering unit value at the highest input level. For example, if the input is a 4-20ma signal, then this is the engineering unit value at 20ma with the specified decimal point position.	`Chan 31 Full Scale` `0-999999 = 100.0`
Step 12	The Channel Mode should be set to 2 for Call on Alarm conditions or 1 for Status Only or 0 for Disabled Press # if the value is OK.	`Chan 31 Mode` `0-2 = 2 Alarm`

	What you do:	What the display shows:
Step 13	The Alarm Delay specifies the amount of time the input must be in the alarm condition before a call-out begins. Press # if OK or enter a new 5-digit value as nnnnn (e.g. 00300 for 300)	`Chan 31 Alarm Delay` `0-65535 sec = nnnnn`
Step 14	The Redial Delay is the amount of time after the channel has been acknowledged before another call is made if the channel is still in the alarm condition.	`Chan 11 Redial Delay` `1-168 hrs = 1`
Step 15	The Alarm Type specifies the following **0** (normal) indicates the alarm condition tracks the input signal in/out of alarm. **1** (latch) indicates once an alarm condition occurs it continues to call until the channel is acknowledged AND the input goes back to the normal condition. Press # if OK.	`Chan 31 Alarm Type` `0-norm 1-latch = 0`
Skip to Step 17 if this Scout has a GSM cellphone		
Step 16	Enter 1 to Activate the Relay when the channel goes into alarm or 0 to not activate. The relay will follow the channel into and out of alarm.	`Chan 31 Alarm Relay` `0-no 1-yes = 0`
Loop back to Step 3 if Mode is NOT Alarm		
Step 17	If the present reading is below the Low Limit, the channel goes into alarm and initiates a call and/or a relay activation. **NOTE:** *Press ** to toggle between positive and negative.*	`Chan 31 Low Limit` `+/-999999 =`
Step 18	If the current reading exceeds the High Limit, the channel goes into alarm and initiates a call and/or a relay activation.	`Chan 31 High Limit` `+/-999999 =`
Loop back to Step 3 if this is NOT a GSM cell-phone unit		
Step 19	The Control Phone Position specifies the SMS phone number of the remote Scout-RT SPLC that is called to turn relays on and off.	`Chan 11 Cntrl Phone` `1-4 = -1`

	What you do:	What the display shows:
Step 20	The Remote Relay is the relay number in the remote Scout-RT SPLC that is being called.	`Chan 11 Rem Lo Relay` `11-26 = 0`
Step 21	The Alarm State is the state to change the remote relay to when this channel goes into the Low alarm state. (0 = open, 1 = closed, 2 = static)	`Lo Alarm State` `0-2 = 1 Close`
Step 22	The Normal State is the state to change the remote relay to when this channel goes back into the normal state. (0 = open, 1 = closed, 2 = static)	`Lo Normal State` `0-2 = 0 Open`
Step 23	The Remote Relay is the relay number in the remote Scout-RT SPLC that is being called.	`Chan 11 Rem Hi Relay` `11-26 = 0`
Step 24	The Alarm State is the state to change the remote relay to when this channel goes into the High alarm state. (0 = open, 1 = closed, 2 = static)	`Hi Alarm State` `0-2 = 1 Close`
Step 25	The Normal State is the state to change the remote relay to when this channel goes back into the normal state. (0 = open, 1 = closed, 2 = static)	`Hi Normal State` `0-2 = 0 Open`

Loop back to Step 3

4 Programming remotely over a phone

There are 2 functions that can be programmed from a remote call-in – Phone Numbers and Channel Mode.

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."

4.1.1 Phone numbers

	What you do:	What the Scout says:
	Press # within 5 seconds after hearing 3 "beeps"	"System ready. Enter selection."
Step 1	Press 4 or press # if finished. **NOTE**: *If an Access Code has been programmed, the Scout says"Enter Access Code"*	"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		

4.1.2 Channel settings

	What you do:	What the Scout says:
		"System ready. Enter selection."
Step 1	Press 9 or press # if finished. Enter Access Code if requested.	**NOTE:** *If an Access Code is been programmed, the Scout says "Enter Access Code"* "Channel setup."
Step 2	Enter a channel number	"Enter channel number or press # to exit"
For Digital Inputs…		
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 #: Keep current 0: Normally open 1: Normally closed **NOTE***: A new entry is repeated back.*	"The channel normal state is" open/closed. "Enter new normal state or # to exit"
Step 5	Enter your selection #: Keep current 0: Status only 1: Call on alarm **NOTE***: A new entry is repeated back.*	"The channel mode is" "status only" or "call on alarm" "Enter new selection or press # to exit"

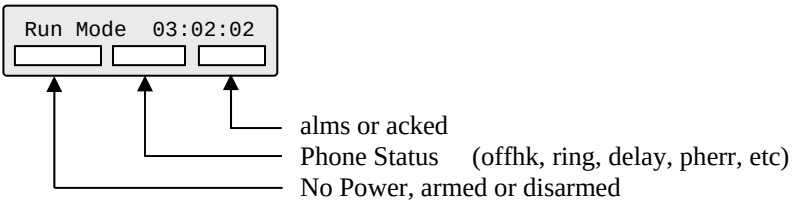
Loop back to Step 2

	What you do:	What the Scout says:
For Analog Inputs…		
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."
Step 7	Enter your selection | # | 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"
	NOTE*: A new entry is repeated back.*	
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 %	"The channel low limit is nn.n %" "Enter new selection or press # to exit"
	NOTE: *A new entry is repeated back.*	
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 %	"The channel high limit is nn.n %" "Enter new selection or press # to exit"
	NOTE: *A new entry is repeated back.*	
Loop back to Step 2		
For Relay Output…		
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	"The channel pulse duration is" nnnn "Enter new selection or press # to exit"
	NOTE: *A new entry is repeated back.*	
Loop back to Step 2		

5 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:



The functions that can be performed while in RUN mode are:

Function	Capability
STATUS (Keypad 0)	Get system status (use PREV and NEXT keys)
PROG/RUN (Keypad 1)	Enter Program mode
ARM/DIS (Keypad 2)	Toggle Arm/Disarm
LOG (Keypad 5)	View Event Log or Data Log (use PREV and NEXT keys)
ACK	Acknowledge alarms
PHONE CHECK/ HANGUP	Test phone line (if phone is not in use) Hang Up phone (if phone is in use)

5.1 Phone Status messages

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

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

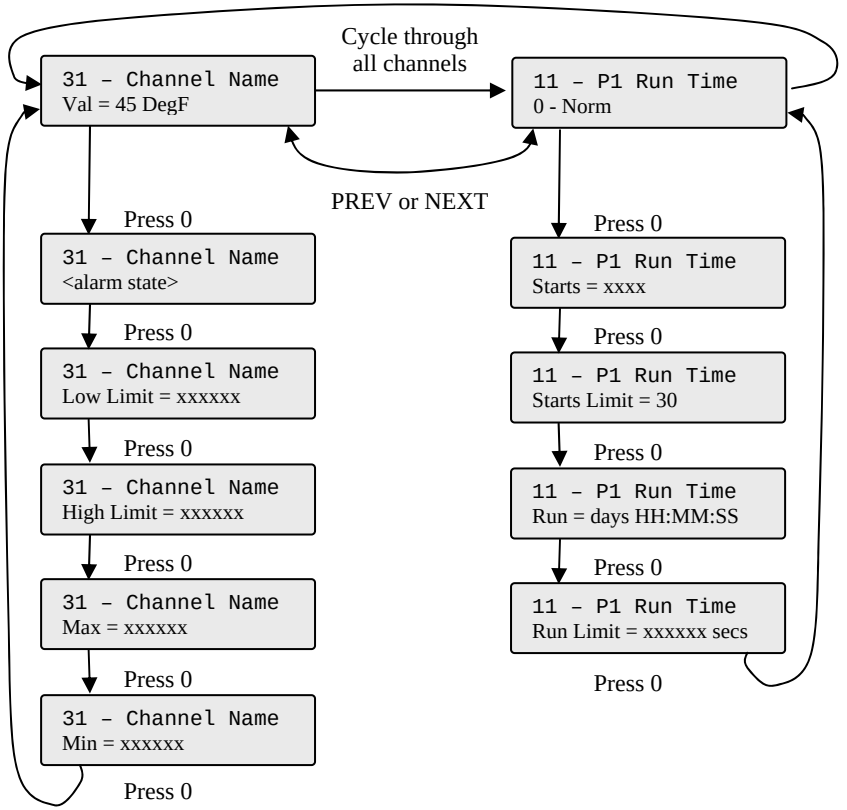
6 Getting System Status

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

6.1 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	*Primary power is being supplied.* Press the NEXT key.	Power normal
	Battery level is normal. Press the NEXT key.	Low Batt normal
	Through all channels…	
	Digital Input 11 is in the alarm condition and is closed. Press the NEXT key.	DIN Chan 11 in alarm closed
	NOTE: 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: *Analog input* *Alarm state* *Low limit* *High limit* *Min since midnight* *Max since midnight* *Digital input* *Starts* *Starts limit* *Run time* *Run time limit*	
		Loop through remaining channels
	DiaLog Scout version	Dialog Scout-D8 V8.4

Loop back to Step 1

NOTE: *Press any key on the keypad to stop the System Status display.*

6.2 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) *beep beep beep*
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		

7 Listening In from a remote call

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) *beep beep beep*
Step 2	Press the # key	"System ready. Enter selection."
Step 3	Press the 5 key to enable Listen-In	The Scout's microphone is turned on for 60 seconds.
	Press the # key during the 60 seconds.	Disables Listen-In
	Press any of the 0 through 9 keys to extend the period 60 more seconds.	"System ready. Enter selection."

8 Acknowledging alarms

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.

8.1 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.

8.2 Acknowledge when called

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." *beep beep beep*
	NOTE: *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.*	
	If you do not press the # key.	"Good-bye"

8.3 Acknowledge when you call in

If you receive a pager notification that a channel is in alarm and you call into the Scout, the Scout asks you to acknowledge any alarms.

	What you do:	What the Scout does:
Step 1	Call into the Scout	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 acknowledge		
		"Channel acknowledged." *beep beep beep*
	NOTE: *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.*	
	If you do not press the # key.	"Good-bye"

9 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.

9.1 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.	Run Mode 03:04:07 armed
	NOTE: *If the Scout is Disarmed, it will automatically become Armed after 30 minutes.*	

9.2 Remotely

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 (followed by any channels in alarm) *beep beep beep*
Step 2	Press the # key within 5 seconds *If an Access Code has been activated, you will be requested to enter it.*	"System ready. Enter selection."
Step 3	Press 2 (ARM/DIS) to toggle between arm/disarm.	"System is armed/disarmed" "Return to arm in 30 minutes" "System ready. Enter selection."
Loop back to Step 2		

10 Activating the Relay

The relays (Channel 21 and 22) can be manually activated or deactivated from the keypad or remotely over the phone.

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

10.1 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 (RELAY) key to see the Activate Relay selection screen. **1** to activate or **0** to deactivate the relay.	`Activate Relay` `0-off 1-on = 0`

10.2 Remotely

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) *beep beep beep*
Step 2	Press the # key within 5 seconds *If an Access Code has been activated, you will be requested to enter it.*	"System ready. Enter selection."
Step 3	Press 7 to listen to the Activate Relay prompt..	"Activate relay. " "Relay is energized (or deenergized)" "Enter new selection or press # to exit."
Step 4	**1** to activate the relay or **0** to deactivate the relay.	"Relay is energized (or deenergized)" "Enter new selection or press # to exit."

11 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.

11.1 To view the Event Log locally

	What you do:	What the display shows:
Step 1	Press the 1 key to enter Program Mode	Program Mode 0-9 =
Step 2	Press the LOG (5) key	View Logs 0-Evt 1-Data =
Step 2	Press 0 to view the Event Log Press 1 to view the Data Log	1) PROG Mode date time
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.	2) DIN3 Cl Alm date time

Press # when finished

11.2 To retrieve the Event Log remotely

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) *beep beep beep*
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:** *if the Date or Time is the same as the previous event, then the Date or TIme will not be repeated.* **NOTE:** *the Scout will say "Event log end" prior to the type of the last entry in the event log.*	"Type is ##' "Date is xx xx" "Time is xx xx xx"

Loop back to Step 4 or press # to exit.

12 Retrieving the Data Log

The DiaLog Scout keeps a Data Log for analog and digital channels that have Reports enabled.

The Data Log contains 100 entries of:

Analog channels	Daily Max and Min values
Analog channels	Total Flow if the engineering units are GPM
Digital channels	Daily total cycles and total run-time (cycles are the number of times the digital input goes from normal to non-normal) (run-time is the amount of time that the digital input is in the non-normal state)

	What you do:	What the display shows:
Step 1	Press the 5 key	`View Logs` `0-Evt 1-Data =`
Step 2	Press the 1 key to select the Data Log	`View Logs` `0-Evt 1-Data =`
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. For example, Channel 11 has a run time of 00 days, 10 hours, 20 minutes, 04 seconds	`01) 07/25` `11 Run=00:10:20:04`
Press # when finished		

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	DTMF tone
20	Alarms acknowledged locally	62	Time has been set
21	Alarms acknowledged remotely	63	GPS fix (1=valid, 0= not valid)
22	Alarm call / phone position	64	Midnight data posting to AT
23	Open alarm / digital channel number	65	GSM modem lockout start
24	Closed alarm / digital channel number	66	GSM modem lockout active
25	Run time alarm / digital channel number	67	GSM modem lockout end
26	Starts alarm / digital channel number	68	Time set from NIST
27	Low alarm / analog channel number		
28	High alarm / analog channel number		
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		

13 Backup Battery

The Backup Battery is a 12VDC battery that 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.

14 Customer Service

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

Antx, inc.
P.O. Box 200816
Austin, TX 78720
www.antx.com
custserv@antx.com

15 Certifications

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.

Other DiaLog Scout certifications:

Industry Canada registration number: IC: 4825A-SCOUT

CE Mark

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