Scout

Central Alarm Panel

Remote monitoring and
alarm notification system

User's Manual

Version 8.0
November 18, 2005

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1 Introduction

The SCAP Central Alarm Panel, or SCAP, is the most user-friendly and reliable remote monitoring and alarm notification system available. Mounted in an industrial enclosure, the SCAP provides simple programming either locally through the integral keypad and display or remotely via a phone call.

Installation is made easy, whether the SCAP 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 SCAP has 2 modes of operation – PROGRAM and RUN. During PROGRAM mode you can change how the SCAP operates. During RUN mode the SCAP is monitoring and performing alarm notification.

The SCAP monitors 8 dry contact and 0, 1 or 3 analog inputs continuously. When any one of the inputs changes from the normal condition to the alarm condition, the SCAP sounds the local horn. After the Silence button is pressed or after a pre-defined time that the horn sounds, the SCAP 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 7.7 and later.

1.1.1 Acknowledging Alarms

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

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

2 Installation

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

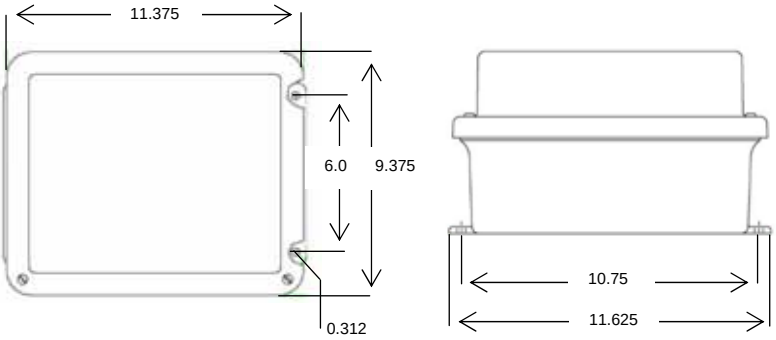
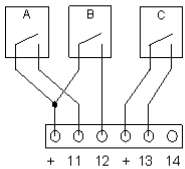
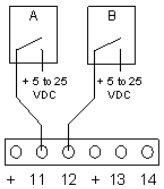
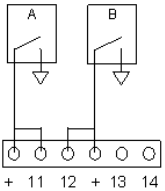
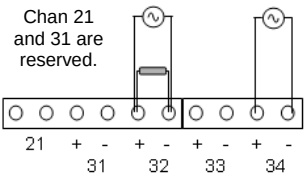


Figure 1 Mounting holes

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 SCAP.
On/Off	To supply power to the SCAP, flip the switch. The SCAP powers up and the display reads "DiaLog Scout".
Digital Inputs: **Dry contacts**	Connect from the '+' to one side of your dry contact and connect from the Channel # to the other side of your contact. **NOTE:** *There are 3 connections for 2 channels.* 

Digital Inputs: Voltage inputs up to 25 VDC	Connect the positive voltage of your input to the Channel # input on the SCAP.  **NOTE:** *Do not connect anything to the '+' input* **NOTE:** *If the grounds are not already common between your device and the SCAP, connect the "-" signal of the SCAP power supply to a signal ground on your device.*
Digital Inputs: Contacts that close to Ground:	 Jumper the '+' and Channel # input together. Connect another wire from the Channel # input to the contact that closes to ground. **NOTE:** *Set the channel to Normally Closed* **NOTE:** *You cannot use the same '+' for any other channel*
Analog Inputs: Voltage inputs up to 5VDC **Current inputs up to 20ma**	Connect the positive voltage to the (+) terminal and the negative to the (-) terminal. Example: channel 34 is wired as a voltage input Connect the supplied precision resistor across the (+) and (-). Connect the (+) terminal to the (-) lead of the sensor. Connect the (-) terminal to the (-) side of the sensor. Example: channel 32 is wired as a current 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 up or On position. The SCAP starts its power up diagnostics.

Upon completing the power up diagnostics, the SCAP is in Program Mode.

If an Access Code has been programmed, the SCAP starts up in Run Mode.

3 Programming from the keypad

The SCAP 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 SCAP 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:

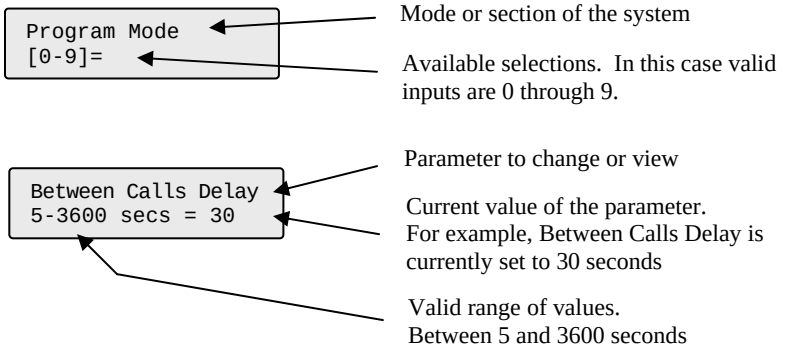
Key	Function	Key	Function
ENTER	Accept the current entry or move to next option	PREV	Moves to the previous selection in a menu
HOME	Go to the top of the Menu (HOME)	NEXT	Moves to the next selection in a menu
*7	Reset the value back to the factory default		

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

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

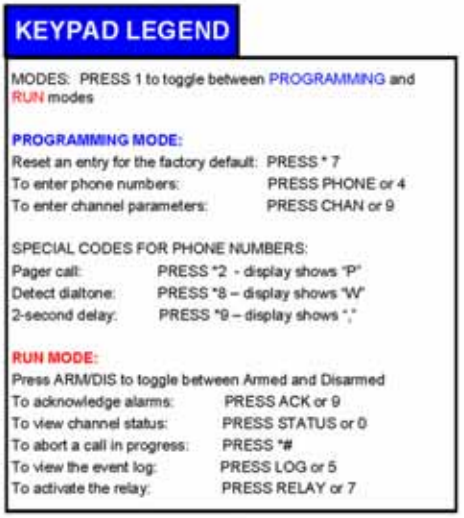
NOTE: *Configuration changes are only saved to non-volatile memory when RUN mode is activated*

3.1 How to Read the Menus



3.2 How to use the Keypad

The SCAP 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:



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 SCAP 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 SCAP.

	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 isn programmed, the SCAP shows 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: S***peaker is intended to confirm that your message was recorded as desired, phone voice quality is excellent.*	`Recording. . .` `Press # to stop`
Step 4	The Site Name that is displayed on the screen shown.	`Site Name` `nnnnnnnnnnnnnnnnnn`
Step 5	The Numeric ID is the number displayed on a pager.	`Numeric ID` `nnnnnnnnnnnnnnnnnn`
Step 6	The Access Code is displayed. Press # if OK or enter a new 4-digit Access Code.	`Access Code` `nnnn`
Step 7	Set the time and date as needed. Press the # key if the value is correct already. **NOTE:** *24-hour clock.*	`Set Hour` `HH:MM:SS`
Step 8	Reset Config sets the unit back to the factory default values.	`Reset Config` `1-rst =`

3.5 Programming Phone Settings

Phone settings consist of options to set for all calls in or out of the SCAP. 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 SCAP is in RUN mode and an Access Code has been programmed, the SCAP shows a screen to enter it.*
Step 2	Press 4	
Step 3	There are 8 phone numbers that can be entered in the SCAP. 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 =`
Step 4	The phone number in the position specified is shown. **NOTE:** *The phone number can be up to 25 numbers long.* **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)	`Pos 1 Phone Number` `nnnnnnnnnnnnnnnnn`
Step 5	Specifies the amount of time to wait before calling the next number in the list.	`Pos 1 Next Call Dly` `5-3600 secs = nnnn`

	What you do:	What the display shows:
Step 6	The amount of time the SCAP waits after issuing the last digit in the phone number before issuing the message. **NOTE:** *0 means Call Progress is enabled. The SCAP calls, waits until the phone has been answered, then delivers the alarm message.* *If the SCAP calls and never delivers the message, then the SCAP 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`

Loop back to Step 4

3.6 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.

Types of Channels	
Channel #	**System**
01	Power Fail
02	Low Battery
03	Low Low Battery
04	Phone
	Digital Inputs
11-18	channel message alpha ID channel mode (status only or call on alarms) channel state (Normally Open/Normally Closed) alarm delay
	Relay Output (local buzzer)
21	pulse duration
	Analog Inputs
32-34	channel message alpha ID channel mode (status only or call on alarms) low limit high limit input type (0-5V or 4-20ma – external resistor used for current) alarm delay

3.6.1 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 = 01`
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 11 Mode` `0-status 1-alm = 1`
Step 5	The Alarm Delay specifies the amount of time the input must be in the alarm condition before a call-out begins.	`Chan 11 Alarm Delay` `0-65535 sec = nnnnn`
Loop back to Step 3		

3.6.2 Digital Channel Setup

	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 = 11`
Step 4	The SCAP 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.	`Chan 11 Alarm Msg` `0-play 1-rec =`
Step 5	Each channel can have a 20 character name that is displayed whenever the Status is shown or a channel is in alarm.	`Chan 11 Alpha ID` `nnnnnnnnnnnnnnnnnn`
Step 6	**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 7	**1** to call when an alarm occurs. **0** to monitor without calling on alarm.	`Chan 11 Mode` `0-status 1-alm = 1`
Step 8	Time the input must be in the alarm condition before a call-out begins.	`Chan 11 Alarm Delay` `0-65535 sec = nnnnn`

Loop back to Step 3

3.6.3 Relay Channel (buzzer) Setup

	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 = 21`
Step 4	0 – buzzer sounds until Silence is pressed or alarm is Acknowledged 1-86400 – buzzer sounds for specified seconds, or until Silence is pressed or alarm is Acknowledged	`Chan 31 Pulse Dur` `0-86400 sec = 30`

3.6.4 Analog Channel Setup

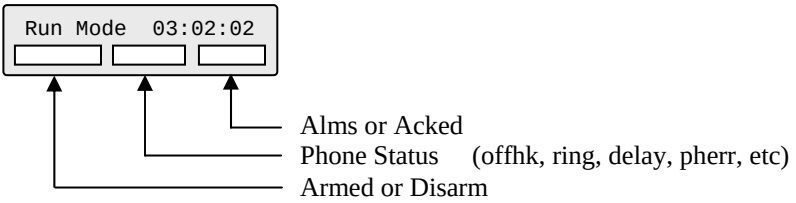
	What you do:	What the display shows:
Step 1	Press the 1 key to enter PROGRAM mode. You can now enter options 0 – 9.	`Program Mode` `0-9 =`
Step 2	Press 9	
Step 3	Enter the Channel Number that you wish to examine or program. Press # to back-up the menu.	`Enter Chan Number` `0x,1x,2x,3x =`
Step 4	The SCAP 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.	`Chan 31 ID` `0-play 1-rec =`

	What you do:	What the display shows:
Step 5	Each channel can have a 20 character name that is displayed whenever the Status is shown or a channel is in alarm.	`Chan 31 Alpha ID` `nnnnnnnnnnnnnnnnn`
Step 7	The Input Type is: 0 – 0-5V 1 = 1-5V 2 = 0-20ma 3 = 4-20ma **NOTE:** *If you are using a current input, install the supplied precision resistor.*	`Chan 31 Input Type` `0-3 = 3  4-20ma`
Step 8	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 = 10  degF`
Step 9	The Zero specifies the engineering unit value at the 0V or 4ma level. **NOTE:** ** *toggles between(+) and (-).*	`Chan 31 Zero` `0-999999 = 0`
Step 10	The Full Scale specifies the engineering unit value at the 5V or 20ma input level.	`Chan 31 Full Scale` `0-999999 = 100.0`
Step 11	The Channel Mode should be set to 1 for Call on Alarm conditions or 0 for Status Only.	`Chan 31 Mode` `0-status 1-alm = 1`
Step 12	The Alarm Delay specifies the amount of time the input must be in the alarm condition before a call-out begins.	`Chan 31 Alarm Delay` `0-65535 sec = nnnnn`
If Mode is Alarm …		
Step 13	If the present reading is below the Low Limit, the channel goes into alarm and initiates a call and/or relay activation.	`Chan 31 Low Limit` `0-999999 = disabled`
Step 14	If the current reading exceeds the High Limit, the channel goes into alarm and initiates a call and/or relay activation.	`Chan 31 High Limit` `0-999999 = disabled`
Loop back to Step 3		

4 RUN Mode functions

While the SCAP 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/	Test phone line (if phone is not in use)
HANGUP	Hang Up phone (if phone is in use)

4.1 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	SCAP 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?)
WrErr	Write error to the Serial EEPROM on the SCAP board. (contact Antx for support/repair)

5 Getting System Status

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

The SCAP 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 SCAP.

	What you do:	What the display shows:
Step 1	Press the 0 key.	
Step 2	Press the NEXT or PREV key.	Power normal
	Press # to exit.	

6 Listening In from a remote call

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

	What you do:	What the SCAP says:
Step 1	Dial the SCAP 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 SCAP'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."

7 Acknowledging alarms

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

For example, if a channel has an Alarm State of Normally Open, the channel goes into alarm when the input closes. The channel stays in alarm as long as the input is closed. If the Alarm Type is set to Latching, then the channel stays 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 SCAP starts calling the phone numbers in the Phone List. It continues to call through the list of phone numbers until the channel goes out of alarm or until it is acknowledged.

When acknowledged, the SCAP stops calling and waits the time specified by the Ack Redial Delay before starting to call again if the channel is still in the alarm condition.

7.1 Acknowledge from the keypad

While in RUN mode, press the ACK key.

The SCAP changes the display information for the channel(s) in alarm from Alarm to Acknowledged and stops calling.

7.2 Acknowledge when called

	What you do:	What the SCAP does:
Step 1		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, Step 1 is repeated (Msg Repeat times)		
If you do acknowledge		
		"Channel acknowledged." *beep beep beep* *"Good-bye"*

8 Arming and Disarming

At times it may be beneficial to Disarm the SCAP 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: *The SCAP 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: *The SCAP automatically switches to Armed after 30 minutes.*	

9 Retrieving the Event Log

The SCAP keeps the last 100 events that occurred in a local non-volatile log. The Event Log can be viewed locally on the display.

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

	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 Log 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		

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		
16	Call Incoming		
17	Call Complete		
18	Voice Call		
19	Data Call		
20	Alarms acknowledged locally		
21	Alarms acknowledged remotely		
22	Alarm call / phone position		
23	Open alarm / digital channel number		
24	Closed alarm / digital channel number		
25	Run time alarm / digital channel number		
26	Starts alarm / digital channel number		
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		

10 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

11 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 are 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 SCAP certifications:

Industry Canada registration number: IC: 4825A-SCOUT

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