

PMAC Supplemental Manuals

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**PMAC-SMS
USER'S GUIDE
(under development)**

**Last Updated: 26th March 2001
By Stuart Combellack**

PMAC Text SMS Interface

User's Guide

PMAC now incorporates a Text SMS Interface to help users in the field get PMAC information using just their mobile phone. PMAC needs to be properly configured with a GSM Modem or X.25 Radio PAD (See setup instructions below). The appropriate GSM Modem or PAD can be bought from Technolog or your local supplier.

Setting-Up PMAC for Text SMS Interface

You will need an installed copy of PMAC (installation date of November 2000 or later), GSM Modem or X.25 Radio PAD, Serial connector cable, Antenna, Power supply and a spare communication port on your PC.

First connect the modem/PAD to the spare communications port on your PC with the serial connector cable. Then connect the antenna and power-supply to the modem/PAD. If you are using a Radio-PAD, then you will need to register the device by holding-in the test button for 5 seconds as you power the PAD for the first time.

You will need to contact Technolog to get your system enabled for PMAC-SMS and instructions on how to setup your system to respond to text messages.

How to send a Text Message

The procedure for sending an SMS message depends greatly on the type of mobile phone that you have. Please refer to your phone users manual for detailed instructions on sending Text SMS Messages.

More generally, the method is simple. Go to the "Messages - Write Message" screen on your phone. Type the required PMAC instruction message into your phone (as detailed later) using the alphanumeric keypad. Now "Send" the message. Your phone will then ask you for the telephone number of the message recipient. Type the PMAC GSM Modem or Radio PAD number and press "Send" again. The phone should then report that the message has been sent.

After a short delay PMAC will respond to the message (if the message attracts a response). The delay will vary, but for most messages should be less than a minute. If the user request involves contacting the logger then the response time will be much longer because PMAC has to contact the logger before responding.

Text Instructions that PMAC Understands

Here is the current list of Text instructions that PMAC understands. Full details of these messages with typical responses are in the next section.

A or a – “Advertising” message. This message gets sent to all PMAC-SMS users.

C or c – Commission New Site Message. This sets-up a new site in the PMAC database.

D or d – Data Dump. This returns the last 10 readings from each of the specified site’s channels.

E or e – Search for site. **This has not been implemented.**

F or f – Nightline Flow. This returns the nightline flows for the last week (flow sites).

I or i – Logger Information Message. This returns the site information from the database.

L or l – Logger Information. **This has not been implemented.**

N or n – Note Message. This sends a message to the PMAC alarm log.

O or o – Last Poll Time Message. This returns the time the last poll completed.

P or p – Pressures (Min or Max) for the last week (pressure sites).

R or r – Reading request Message. This returns the last file reading or the last logged reading.

S or s – Status Message. This returns a message if PMAC is running.

V or v – Volumes Message. Returns the daily and a total volume for the last week (flow sites).

W or w – Installer Set Message. This sets and clears the installer number.

? – Help message. This message returns a list of all of the commands that PMAC-SMS understands.

PMAC Text Message Details

A or a – “Advertising” message.

This message allows one of the PMAC-SMS users to send a message to every other PMAC-SMS user. The format is simply “A” followed by the message you wish to send (no space). The individual users are able to remove themselves from the advertising list by sending the message “AREM”.

Example Message:

Athis message is to all users

PMAC will send the following message to all users:

PMAC – “This message is to all users” To remove your number from this list, reply with “AREM”

C or c – Commission New Site Message

This message tells PMAC to add a new site to its database and then call the site to download the logger settings.

The user should give the full details of the site including communications protocol type (**T or W** for Technolog GPS protocol, **G or E** for E5565 Protocol), PMAC ID for the site, telephone number and site name. The telephone number and site name fields should be separated by commas **or** spaces but not both.

PMAC will read the information that the user provides in the commission SMS and immediately add the site to the database. PMAC then calls the site requesting the complete settings from the logger. PMAC then sends a success or failure message back to the users phone.

Example Message:

CT1500,07760171882,Test Site

(This tells PMAC to Commission a new Technolog GPS logger with PMAC ID **1500**, telephone number **07760171882** and site name: **Test Site**)

Example Response:

PMAC – Site 1500 Settings Downloaded OK

Or

PMAC – Failed to download settings for site 1500

D or d – Data Dump Message

This message instructs PMAC to return the last ten readings from the specified site. PMAC will return one message per channel. Simply send a message with the character “D” followed by a valid PMAC ID.

Example Message:

D123
D0123
D 123

Example response:

Data dump:0123
Flow1
13/11/2000
(Time-cum/hr)
14:30-32.23
14:35-31.22
14:40-30.76
14:45-29.76
14:50-28.65
14:55-27.89
15:00-30.66
15:05-31.04
15:10-32.12
15:15-32.03

E or e – Site Search Message

This message instructs PMAC to search for site details based on a search criteria. This message is useful if a user is on-site and knows part of a site name or number but needs the PMAC ID to get further information from PMAC.

This message has not been implemented yet.

F or f – Nightline Flow Message

This message instructs PMAC to return the last week's nightline flow information. PMAC will return one message per flow channel. The method of minimum flow calculation is the WRC recommended method – that of the minimum sliding hourly average between midnight and 6:00 AM. Simply send a message with the character "F" followed by a PMAC ID.

Example Message:

F123

F0123

F 123

Example response:

Nightline:0123

Flow1

(Date-cum/hr)

13/11-32.23

12/11-31.22

11/11-30.76

10/11-29.76

09/11-28.65

08/11-27.89

07/11-30.66

I or i – Logger Information Message.

This message retrieves the site information from the PMAC database for a given PMAC ID. PMAC will return the site name, telephone number, protocol and type (temporary or permanent).

Example Message:

I1500

Example Response:

PMAC ID 1500, Name: Test Site, Tel: 07760 171882, GPS, Permanent

L or I – LGR Information Message

This message returns a summary of the LGR information from the specified site.

This message has not been implemented yet.

N or n – Note Message.

This message puts a user message into the alarm log. The alarm banner will then display the message. This can be used for sending messages to the PMAC operator, or adding messages to the PMAC log describing an installation process, for example. PMAC returns nothing to the sender.

Example Message:

NThis is a Test message

Example Response:

(None)

PMAC will display “This is a Test message” in the alarm log and the alarm banner.

O or o – Poll Time Message

This message retrieves the time of the last poll from PMAC. This message is useful to quickly see if the PMAC poll worked for the previous night and if it went well. PMAC will respond in one of three ways. If the poll has completed it will return the date and time of the last poll. If PMAC has never completed a poll that it is aware of it will tell you that the last poll time was unknown. If the poll is still running it will tell you about that as-well.

Example Message:

O

Example Response:

PMAC – Poll currently running – The PMAC poll program is currently running.

PMAC – Last poll time unknown – PMAC is unaware of a poll ever being run.

PMAC – Last Poll: 04:45 (02/11/2000) – this is the completion time of the last poll.

P or p – Pressure Message

This message instructs PMAC to calculate and return a list of the minimum or maximum instantaneous daily reading for the specified site. PMAC will return one message per qualifying pressure channel. If a channel is a statistical channel, then the minimum MEAN reading is returned. PMAC returns the last week's minimum or maximum **not** including the current day (because the day is not yet complete).

Example Message:

P123
P0123
P 123

Example Response:

MIN Pres:0123
Pressure1
(Date-m)
13/11-38.0m
12/11-37.0m
11/11-38.0m
10/11-36.0m
09/11-35.0m
08/11-34.0m
07/11-35.0m

R or r – Reading request Message

This message returns the latest readings for each channel of the specified logger. Depending on the message sent, PMAC will either just return the last reading from the site data files or it will call up the logger and download the latest data before returning the information to the user.

Example Message:

R1500 - Returns the last rreading from the site data files.
RF1500 - (same) Returns the last rreading from the data files.
RL1500 - Calls the logger to get the latest data before returning the latest readings.

Example Response:

PMAC data for site 1500: Pressure: 54.25m Flow: 18.00cum/hr

Or

PMAC – Downloaded OK but no data to return for site 1500

Or

PMAC – Comms error when downloading data from site 1500

S or s – Status Message.

This message asks PMAC to report on its status. Currently PMAC will only report if it is working correctly. Future versions are expected to report more fully if there are any known problems.

Example Message:

S

Example Response:

PMAC is working OK

V or v – Volumes Message

This message instructs PMAC to return a list of the daily volumes for the last week and a weekly total volume. PMAC does not include the current day in the list because the current day will not have complete data for it. The weekly volume will only be included if there is complete data for the whole week.

Example Message:

V123
V0123
V 123

Example Response:

Daily Vol:0123
Flow 1
(Date-cum)
13/11-1342.0
12/11-1400.0
11/11-1652.0
10/11-1672.0
09/11-1598.0
08/11-1408.0
07/11-1203.0
Week Total:
10275.0

W or w – Installer Set Message

This message instructs PMAC to tell the calling phone every time a new site is added to PMAC. This can be used by a logger installer to easily find-out if the remote communication between the logger and PMAC is working without having to go to the PMAC PC or use a settings or data request SMS Message. This is also especially useful for Cello installers to test the communications of their loggers because as soon as a Cello is started logging the Cello settings are sent to PMAC. PMAC will then notify the installer that PMAC has received the settings. There can only be one registered installer per copy of PMAC. You will be told if you were the registered installer but somebody else has taken it from you.

Example Message:

W - Set the users phone as the installer phone
WR - Remove this phone as the installer phone

Example Response:

You are now the registered installer. Your Number: 07760171882. You will be notified when new sites are added to PMAC.

You are no longer the registered installer. (when you remove yourself with the PR command)

You are NOT the registered installer. (when you try and remove yourself as the registered installer when you are not)

You are no longer the registered installer. Installer information now registered to 07760171882 (when another user has registered themselves as the installer and you were previously the installer)

? – Help Message

This message instructs PMAC-SMS to return a full list of commands supported by PMAC-SMS. The response currently runs to four messages that list the letters and meanings for: A, C, E, F, I, L, N, O, P, R, S, V and W.

Example Message:

?

Example Response:

PMACSMS Help(1) – “A”/”AREM”= Send message to / remove number from user list, “C”= Commission new site, “E”= Search for site

PMACSMS Help(2) – “F”=Nightline Flow, “I”= Site database information, “L”= LGR Information, “N”= Note message

PMACSMS Help(3) – “O”= Last poll time, “P”,”PI”/”PA”= pressure min/max, “R”,”RF”/”RL”= Last file/logged reading

PMACSMS Help(4) – “S”= PMAC Status, “V”= Daily+Weekly Volumes, “W”/”WR”= Installer phone set/clear

SMS ALARM MANAGER USER'S GUIDE

© Technolog Limited, November 2001

Written by Stuart Combellack
Note on Single Host registry configuration
added December 2003

Introduction

The SMS Alarm Manager tool is used to configure PMAC to send alarm SMS messages to different mobile numbers. You can add numbers to PMAC and set-up lists of sites that those users want alarms for. You can also give each user a time-period within which they want to receive alarms (e.g. 9AM-5PM, Monday-Friday).

After changing the configuration here there is no need to re-start PMAC. Changes immediately take effect.

For this facility to work either a GSM Modem or X.28 Radio-PAD needs to be attached to the PMAC Machine and it needs to be configured as a Cello Modem. This is done with the Communications Set-up dialog within PMAC.

Please note that if time-windowing is used only alarms that occur within the time window will be forwarded to the user's mobile phone. Alarms, for example, from the previous night will not be forwarded when a time-windowed day-worker starts in the morning.

PMAC Alarm Manager

Alarm Group	Telephone Number
-------------	------------------

Selected Group Details

Alarm Group Name
[Text Field]

Send Alarm SMS, Number =
[Text Field]

Send Alarm Email, Address =
[Text Field]

Send Alarm Pager Message, Number =
[Text Field]

Alarm Group Site List File
[Text Field]

Use Time Restrictions

Time Restriction Window

Between Times
[Time] TO [Time]

Between Days
[Day] TO [Day]

Use Alarm Restrictions

SMS Alarm Manager Configuration

This is the SMS Alarm Manager dialog. Here the user can add and remove users and specify their names, numbers, active time-periods and site lists. The configured users are listed on the left-hand side and the configuration details are edited on the right-hand side. The right-hand side controls are only activated when adding a new user or editing an existing user's details (done by clicking on the user's name in the list on the left)

The **New Group** button adds a new user to PMAC and enables the controls on the right-hand side to enter the user's configuration details. The **Delete Group** button deletes the selected group from the left-hand list. There is no un-do for this operation so care should be taken when using this.

IF SINGLE HOST: Normally you'll need one Host PC GSM Modem to collect data and alarms and a second to forward alarms to mobile phones. Should you want to use one Host PC GSM Modem to fulfil both functions, you need to set a variable in the registry. **Warning:** make sure you have either a backup of the registry or a recent set point for System Restore so the registry can be easily restored.

To set the registry variable, go to Run (Start/Run), type "regedit" (no quotes) and press ok. In the registry, go to:

HKEY_LOCAL_MACHINE\Software\TechnologLtd\PMACPlus\CommsHandler

Create a new DWORD (Edit/New/DWORD value) named "AllowUserSMSMessages" (no quotes). Right click on the name and modify value = 1 (hexadecimal).

DETAILS OF THE CONTROLS

Alarm Group Name - This field sets the name of the group used to uniquely identify the group being edited. Care should be taken to ensure that the group name is unique. The Alarm Manager does not check this.

Send Alarm SMS, Number - This is the mobile phone number that the SMS alarms will be sent to.

Send Alarm Email, Address - This is the email address that the SMS alarms will be sent to.

Send Alarm Pager Message, Number - This is the pager phone number that the SMS alarms will be sent to.

Alarm Group Site List File - This is the site-list description file that is used to check if the user wants to receive site alarms. If there is no file entered here then the user is assumed to want to see ALL alarms generated on the system (including internal PMAC alarms with PMAC ID of 0000). The restriction file is saved in the form of a “.txt” file that contains a description of the range(s) of Site ID’s that the user wants alarms for. The file may contain any of the following commands, with one command on each line:

<PMAC ID> (e.g. “1234”)

This means that the client can have access to the information for this site (1234).

<PMAC ID>-<PMAC ID> (e.g. “1234-2345”)

This means that the client may access any site with a PMAC ID within the range including the two given ID’s, inclusive (e.g. 1234, 1235, 1236... 2344, 2345).

-<PMAC ID> (e.g. “-1234”)

This means that the client may access any site with a PMAC ID that is less than or including the given PMAC ID (e.g. 0001, 0002, 0003... 1233, 1234).

<PMAC ID>- (e.g. “1234-“)

This means that the client may access any site with a PMAC ID that is equal to or greater than the given PMAC ID (e.g. 1234, 1235, 1236, 1237... 9998, 9999).

These commands may be added to a single restriction file, separated by a carriage return as in the following example:

Example1.txt:

“

-0005

0009

0012

1236

1267

1280-1290

7000-8000

9970-

“

Edit File - This button runs notepad on the site list file allowing it to be edited.

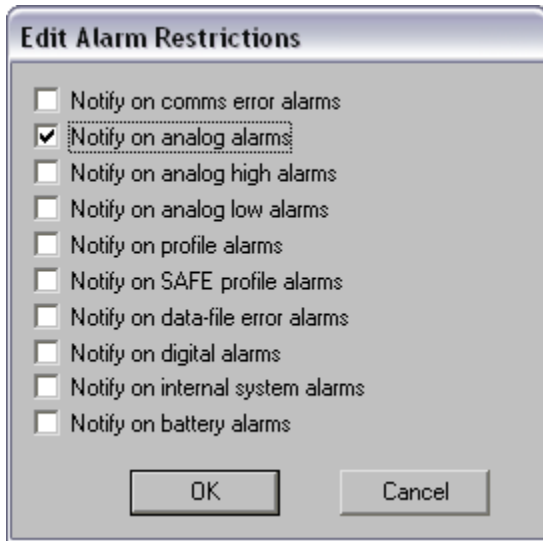
Use Time Restrictions - This switches-on the time restrictions enabling the time-windowing of the alarm notifications. Alarm messages will be sent to the user if they happen within the time window.

Between Times - This switches-on the time-windowing. Hours of the day can then be selected from the two drop-down boxes providing a start and end time for the time window. If the end time is before the start time, e.g. 20:00 TO 06:00 then it is assumed that the time window stretches over midnight between the times. If both times are the same then only alarms that occur in the selected hour will be forwarded to the mobile.

Between Days - This switches-on the day windowing. The two drop-down boxes contain days of the week. Again, if the end day is before the start day the window is assumed to stretch over the week-end.

Use Alarm Restrictions – This switches-on restrictions as to what alarms will be sent.

Edit Restrictions – Opens a dialog allowing selection of what alarms will be sent. If box is checked, alarm will be sent.



Reset - This re-reads the settings from disk over-writing any changes made.

Save - This saves the changes made to disk and updates the list on the left-hand side.

**PMAC
ALARM WIZARD MANUAL**

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1 Introduction.

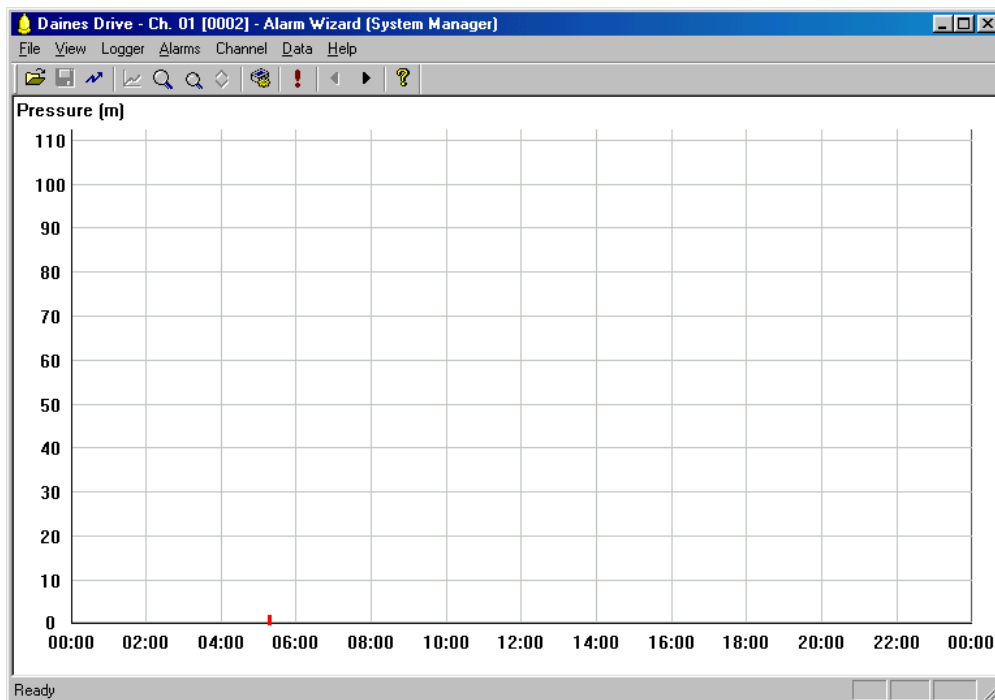
Alarm Wizard is a new feature of PMAC designed for setting alarms on all Technolog data loggers capable of remote communication. This includes Cello, Newlink and Utilog.

Various alarm combinations can be set including high, low and windowed alarms along with data update on alarm and data send after alarm. The Cello also supports the more complex profile alarms.

In order to amend, send or save alarm settings, log onto PMAC with System Manager privileges.

2 Getting Started.

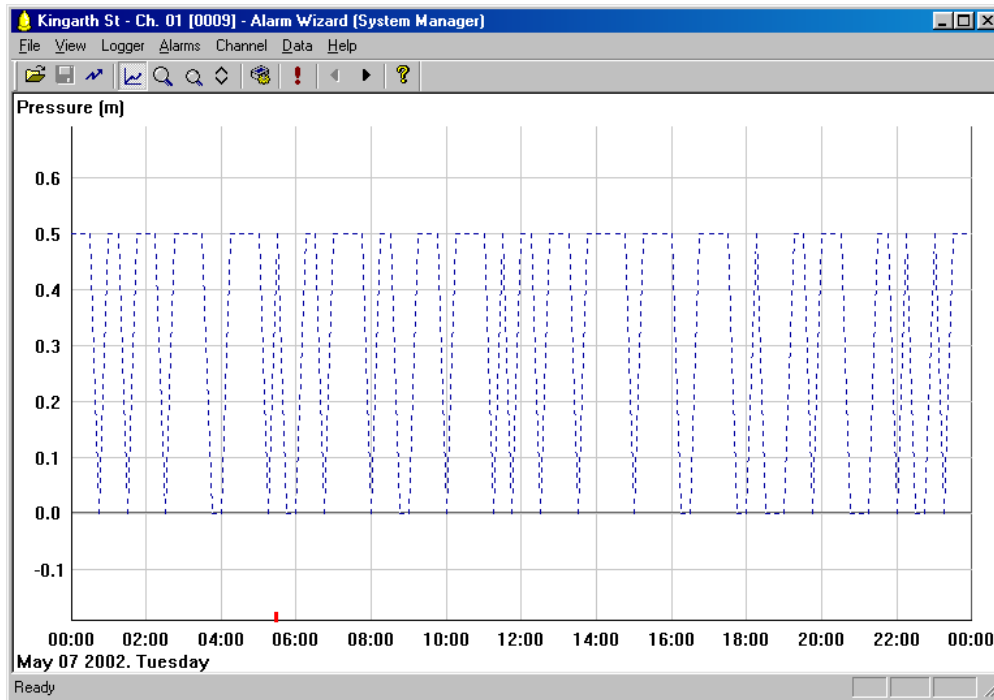
Alarm Wizard is loaded by clicking on the Alarm Wizard (Bell) icon on your chosen site in the Site Database. Upon loading, you will be presented with the screen below. This window is displayed whenever Alarm Wizard is running. It has a menu bar and tool bar which provide access to Alarm Wizard functions.



In order to set or edit alarms reliably, you should load the data file (.dat found in the pmac/data directory) for your chosen logger and data channel.

- (i) Click on File-> Open and load the .dat file for the particular channel of the logger you wish to create alarms for.

(ii) You should now see one day of data for the chosen logger. Use the arrow keys to move around the data or the scroll bars on the data axis.



- In the case of Cello, a red mark will be visible at the bottom of your screen of data. This is the current dial-in time of the Cello.

3 Menu Options.

3.1 File Menu:

<u>O</u> pen	Displays the Select Data File window to enable the user to choose which channel to set/view alarms on.
<u>S</u> ave	Allows the user to save the current alarm settings to the logger settings file.
Send to Local Logger	Downloads the current alarm settings to the logger attached to the communications port.
Send to Remote Logger	Sends the current alarm settings to the remote logger via the appropriate modem. If the modem is currently in use, the details are placed on the queue.
<u>E</u> xit	Exit the Alarm Wizard program.

3.2 View Menu:

<u>T</u> oolbar	Ticked when enabled (Tool Bar displayed).
<u>S</u> tatus Bar	Ticked when enabled (Status Bar displayed).
Data	Ticked when enabled (Data displayed).
Zoom In	Zooms in on the Y-axis of the current data.
Zoom Out	Zooms out on the Y-axis of the current data.
Auto Scale	Automatically scales the Y-axis to provide the best possible fit for the data currently being displayed.

3.3 Logger Menu:

View Settings	Displays the current global and channel settings for the chosen logger.
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3.4 Alarms Menu:

Set <u>A</u> larms	Opens the Alarm Settings window. Enables the setting of high, low, windowed and profile alarms (if applicable). Enables the changing of dial in times, contact numbers and data on alarm.
Raise Profile	Raises the current alarm profile by 1/256 of the full scale.

Decrease Profile	Decreases the current alarm profile by 1/256 of the full scale.
Increase Deadband	Increases the current profile alarm deadband by 1/256 of the full scale.
Lower Deadband	Decreases the current profile alarm deadband by 1/256 of the full scale.

3.5 Channel Menu:

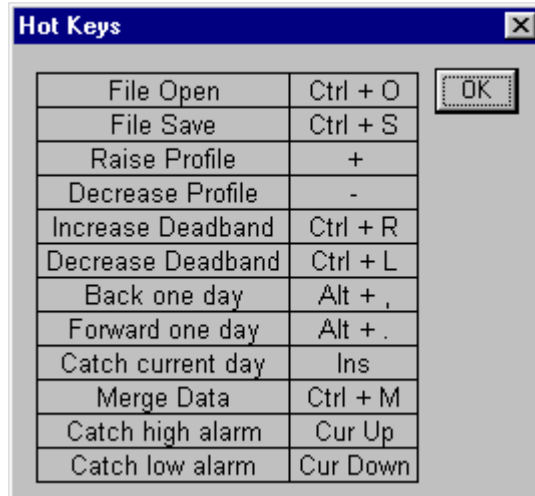
Next	Displays the data on the next logged channel.
Previous	Displays the data on the previous logged channel.

3.6 Data Menu:

Back one day	Moves the data back by one 24hr period.
Forward one day	Moves the data forward by one 24hr period.
Catch this <u>D</u> ay	Uses the data shown on screen to create a Cello alarm profile. This option is only suitable for very repeatable data.
Merge Data	Averages the current drawn profile with the data shown on the screen. Repeatedly using this option will eventually give the same result as Catch this <u>D</u> ay.
Catch <u>H</u> igh Alarm	Identifies the highest data point shown on screen and sets the high alarm at that value.
Catch <u>L</u> ow Alarm	Identifies the lowest data point shown on screen and sets the low alarm at that value.

3.7 Help Menu:

Keyboard Map	Shows the shortcut keys for the Alarm Wizard (below).
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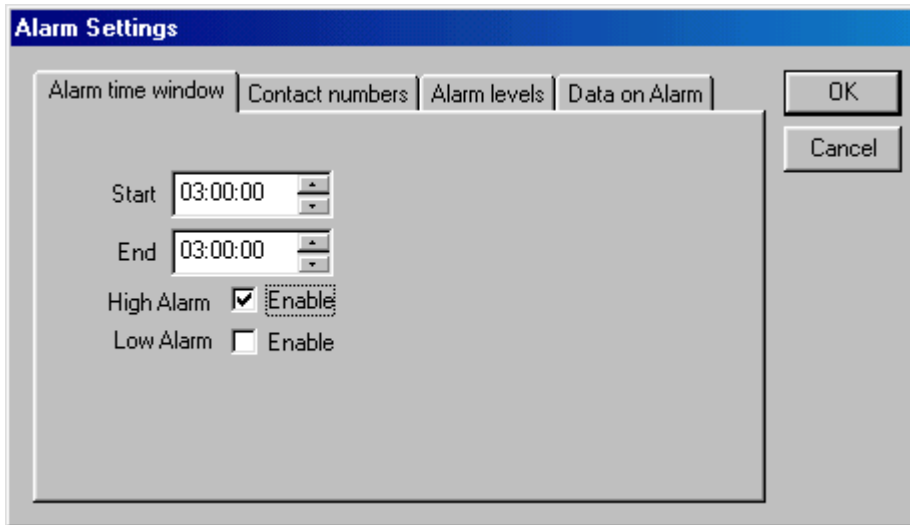


About Alarm Wizard

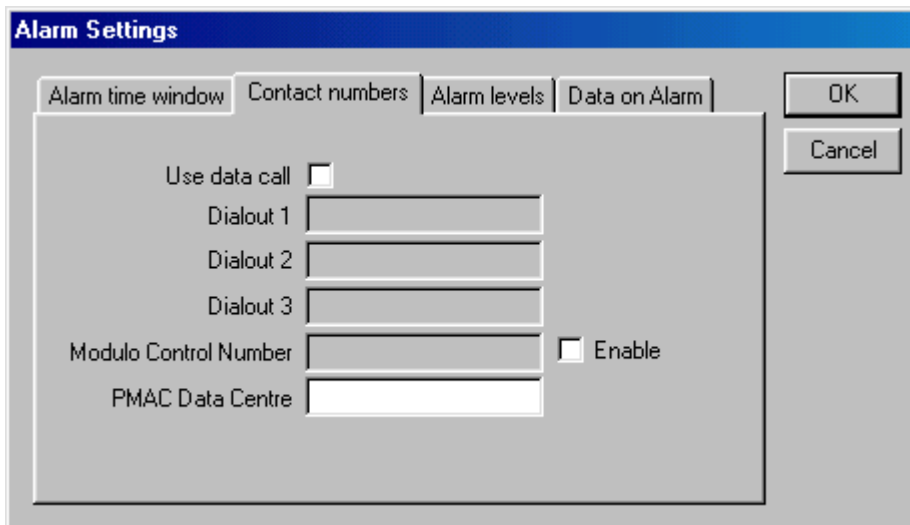
Displays the version number for both the Alarm Wizard and PMAC Plus.

4 Setting Alarms.

All Alarms are set using the Set Alarms option on the Alarms menu. This will display the Alarm Settings window that contains four or five tabs depending upon the type of data logger you are setting alarms for.

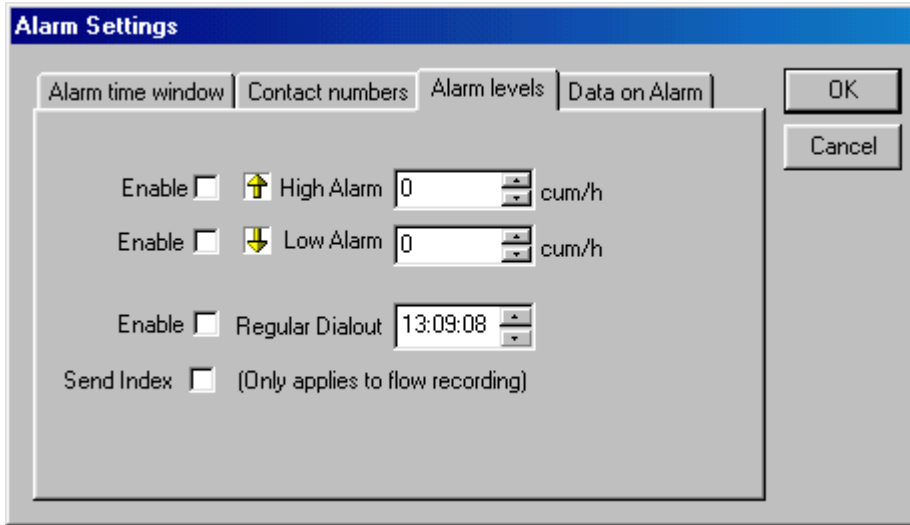


The Alarm time window enables the user to set a windowed period during which alarms are valid. This period is set using the 24hr clock and is applicable to High and/or Low alarms.

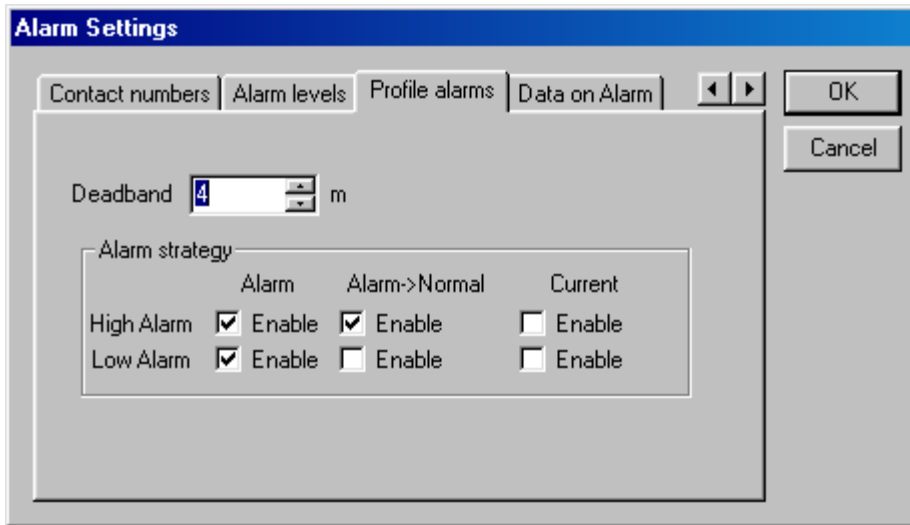


The Contact numbers window enables the user to set the phone or data centre numbers that the Datalogger should contact.

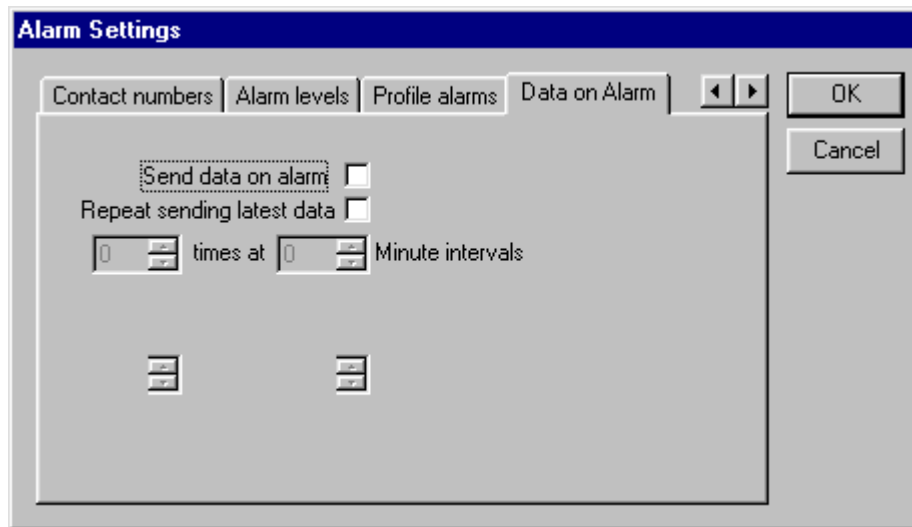
The Modulo controller number is for use with Modulo electronic pressure controller.



The Alarm levels window enables the user to set High and/or Low alarms. The alarm levels can also be adjusted on screen. Regular Dial-out can be enabled at a chosen time and where appropriate the logger can be set to send index readings to the host PC along with the regular data.

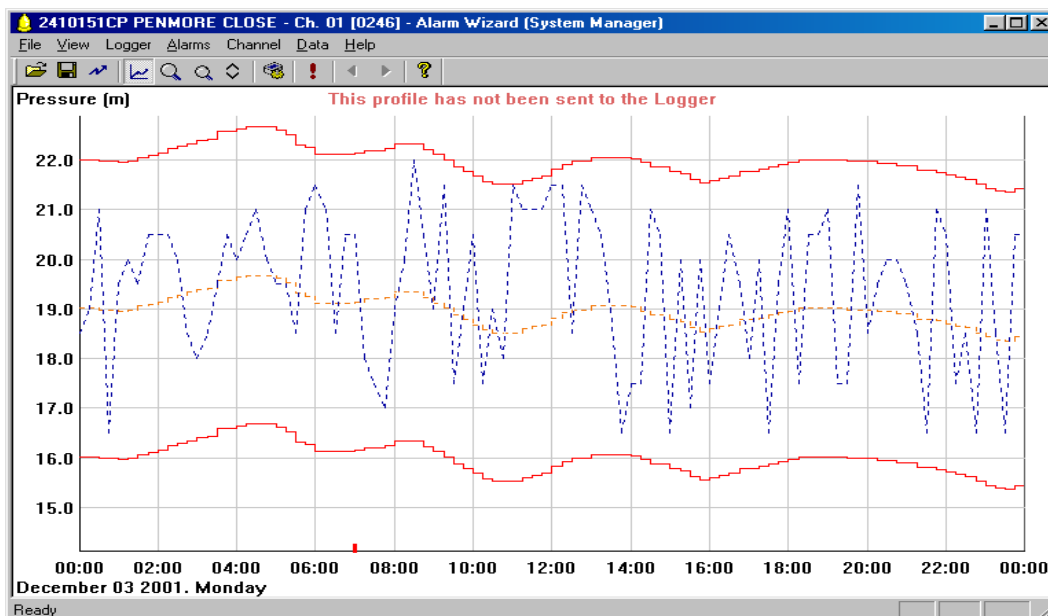


The Profile alarms window is only visible for Cello alarms. From here, the user can set the value of the deadband outside which an alarm will be triggered. The 'Alarm to Normal' status alarm can also be enabled if required. Current alarms are used in conjunction with Modulo.



Data on Alarm enables data send when the alarm state occurs along with follow up data at predetermined intervals as appropriate.

Once alarms are set, press OK. The selected alarms will appear on screen. Alarms are shown in red around the data in blue. Windowed alarms are shown in red dashed lines. Cello profile alarms are shown in orange dashes with the corresponding deadband limits above and below in red solid lines. The profile can be adjusted from the default flat line at zero, by drawing on top of the data.



Adjustments can be made either by returning to the Alarm Settings window or by altering the alarms (drag and drop) on screen. Following on from any adjustments a message will be displayed at the top of the screen stating 'This profile has not been sent to the Logger'.

Once you are satisfied with the alarms, send the setting information to the Logger. This can be done locally or remotely.

Locally, click on File -> Send to Local Logger.

Remotely, click on File -> Send to Remote Logger.

At this point you may also be requested to save the alarms details to the .lgr file. PMAC will contact Newlink, Utilog and other PSTN loggers immediately. An SMS message containing alarm details is sent to the Cello and will be received at the next wake-up time. When alarms are received by the data logger, an acknowledgement is sent to PMAC. This confirmation is visible at the top of the Alarm Wizard screen.

It is important that Cello alarms are set with great care as many messages may be wasted if the alarm limits are set inappropriately.

5 Limitations.

Cello profile alarms are not supported for Cellos before Version 3.33.

When using Profile alarms, Cello has a single byte to store the deadband range. This is independent of the recording type. For example:

Typical settings would be

Pulse significance = 0.01 CUM

Logging rate = 15 minutes

1 pulse in 15 minutes = 0.04 cum/hr

255 pulses (1 byte) in 15 minutes = 10.2 cum/hr

Please note, 10.2cum/hr is the range of the deadband, this actually gives +/- 5.1 cum/hr above and below the profile.