

Instructions for Use

V 1.3 March 2012

For definitions of all items and terms used in these instructions go to www.general-alert.com/support/definitions

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Reason	for	Update:
Etherne	t	



Description

The General-Alert system is a flexible platform for sensing multiple physical properties (heat, flow, humidity, pH etc.). Parameters can be set online to raise Alerts when given parameters are exceeded. Multiple users can be notified of Alerts by SMS and/or email.

Data can be gathered from sensors and displayed online in graphical form. This data is therefore visible to anyone in an organisation, wherever they are located.

Features will be added regularly to enhance the capabilities of the system.

Security

The security of data is of paramount importance in the operation of the General Alert system.

Users of the system need to ensure that Usernames and Passwords are kept securely.

General Alert Ltd undertakes to use its best endeavours to ensure that all equipment and all data is available only to the designated User Account.

General Alert Ltd reserves the right to access Users' data at any time to ensure the smooth running of the system.

For full Terms and Conditions go to www.general-alert.com.



Base Unit Commnications

Currently (December 2011), the General Alert Base Unit has 2methods of communication – GSM Modem and Ethernet. The following describes how to change from one to the other. You will need to contact Technical Support to ensure functionality after making changes.

Start from the Operating Screen shown on the right.	General Alert m
The GSM modem (m) is currently being used for communications to and from the Base Unit.	28 Aug 10 09.44
Press Set, Wait will be shown	General Alert
	Wait
Press Set (Options)	General Alert
	Start Options
Press Set	Options
	Pod Edit >
Press Set	Options
	Set Clock >
Press Set	Options
	Add New Pod >
Press Set	Options
	Remove POD >
Press Adjust as it is the communication type that we wish to change.	Options
	Communication >

At present this Base Unit will use a GSM modem to communicate using SMS. Press Adjust to show the following screen:	Communication Modem
To select Ethernet as the means of communication, press Set. If Ethernet is used, messages will be sent to and from the Base Unit electronically over the internet instead of using SMS.	Communication Ethernet
Pressing Set again will show this screen.	General Alert Start Options
This screen shows a Base Unit using a GSM modem (m) seeing a full signal strength. The black column would be shorter for a weaker signal.	General Alert m 25 Dec 11 17:56
The screen is likely to be shown when the modem is searching for a GSM signal but is having difficulty locating it. After some time attempting to connect to a GSM signal without success, an "x" will be shown in place of the "s".	General Alert m s 25 Dec 11 17:56
This screen shows a Base Unit using an Ethernet connection. The Base Unit is connected to the Ethernet port AND the Ethernet port is connected to the internet.	General Alert E 25 Dec 11 17:56
This screen shows a Base Unit using an Ethernet connection. The Base Unit is connected to the Ethernet port BUT the Ethernet port is NOT connected to the internet. Check internet availability at the router port where the Ethernet lead is connected.	General Alert E = 25 Dec 11 17:56
This screen shows a Base Unit using an Ethernet connection. The Base Unit is connected to the Ethernet port AND the Ethernet port is NOT connected to the internet. Check internet availability at the router port where the Ethernet lead is connected, and also contact your GA Distributor for technical assistance.	General Alert E = 25 Dec 11 17:56
Notace	

Notes:

If, at any stage in the Options procedure you do not press a button for 30 seconds, the system will automatically return to the Operation Screen.

Adding PODs

The POD is the device that has cable connections to sensors and pushes onto the Back Plane board inside the Base Unit.

There are 12 positions for PODs inside the Base Unit. PODs can be pushed onto any available 15-pin socket on the Back Plane. The position is not important.

Note: It is easier to firstly thread the cable from the sensor through one of the glands on the bottom of the Base Unit, then connect the cable to the POD in the sequence as detailed on the Data Sheet specific to that POD, and then finally push the POD into a free socket on the Back Plane.



Example POD

Before the POD will function it is necessary to install the POD serial number into the memory of the control board inside the lid of the Base Unit. After pushing one or more PODs onto the Back Plane, close the lid of the Base Unit and go to the operating screen (as shown on right).	General Alert E 28 Aug 11 09.44
Press Set,	General Alert E
Wait will be shown	Wait
Press Set (Options)	General Alert
	Start Options
Press Set	General Alert
	Pod Edit >
Press Set	General Alert
	Set Clock >
Press Adjust	General Alert
	Add New Pod >

If only one POD is being added, press Set (Single). You will be able to add the POD and set Alarm limits (see below).	Add Pods
If several PODs are being added at the same time, press Adjust (Group) and all new PODs will be added with default Alarm settings.	Group Single
For Group Addition After pressing Adjust on the screen above, the Control Board will look for any new PODs not currently in its memory. If no new PODs are found the Base Unit will show "No PODs found!" and then revert to the operating screen.	Searching
If a new POD is found and this corresponds to one of the PODs you have just pushed into a socket on the Back Plane press Yes. Continue to press Yes for all new PODs offered.	Add POD T0009999? No Yes
When all PODs have been added, press Set. The screen will return to the Operating Screen.	No New PODs Found OK
The Control Board will now check the status of all PODs in its memory every few seconds and take any action necessary.	
For Single POD Addition	Add Pods
From this screen (see above to get to this point), press Set for the addition of a single POD.	Group Single
After pressing Set on the screen above, the Control Board will look for any new PODs not currently in its memory. If no new PODs are found the Base Unit will show "No PODs found!" and then revert to the operating screen.	Searching
If this is the POD you wish to add, press Set (Yes), if not press Adjust (No) to scroll through any other PODs that may be present.	Add POD S0003041? No Yes
As it is a single POD that is being added, you now have the	Edit Device
opportunity to edit the Alarm settings for the POD. For a description of how to do this, go to the Edit POD section of these Instructions for Use.	Alarm 1



Where Slave Units are installed and linked to the Base Unit by radio or cable, Install PODs on the backplane in the Slave Units and then follow the Add POD routine (as described above) on the Base Unit. All new PODs should be found by the Base Unit and offered for adding as new PODs. If the POD you have installed is not offered, you need to check for poor cabble connections, or a radio link that is not functioning (no line of sight, out of range etc.)

At present (March 2012) users of the General Alert system need to inform General Alert Ltd in UK which PODs are being fitted into which Base Units. GA will then make the correct adjustments to the website interface so that PODs are shown correctly on the users' account pages.

POD Edit on Base Unit

Whilst it is easier to set Alarm limits for PODs on the pages of www.general-alert.com, it may be necessary to set some Alarm levels in the field before returning to a location where there is internet access.

NOTE – if any screen remains unchanged for 15 seconds the Base Unit will revert to the operating screen. This is to ensure that critical events are not missed.

This is the operating screen the operating screen (as shown on right). The solid bloc indicates the strength of the communication signal. E is shown where an Ethernet connection is used, M is shown where a GSM modem is used.	General Alert E 28 Aug 11 09.44
Press Set, Wait will be shown	General Alert Wait
Press Set (Options)	General Alert Start Options
Press Adjust to use the POD Edit feature.	General Alert Pod Edit >
Press Adjust to move to the next POD. If Set is pressed temperature POD T2006 will be edited.	2 Pods found T0002006(Temp) >

If it is Alarm 1 (of 6) that you want to edit, press Adjust, otherwise press Set repeatedly to get to the correct Alarm.

After pressing Adjust the following screen will be shown:

Edit device

Alarm 1

This is the screen to edit Alarm 1. Note there is a cursor under the chevron. Pressing the Adjust button will change the Alarm type (T) from "active below" (<) to "active above" (>). When the correct type is shown press Set.

Alarm 1 T E Limit < Y 00000

For Temperature, "active below" means an Alert will be raised when a temperature below the one shown is detected. Similarly for other measuring PODs.

For a Switch POD, "active below" means an Alert will be raised when a contact is broken. "Active above" means an Alert will be raised when a contact is made.

The cursor will now be under the Enabled (E) position. Use the Adjust button to change from Yes (Y) to No (N). If Yes is selected the Alarm is active. If N is selected the Alarm is de-activated.

Press Set to move the cursor to the Limit digits. Move the cursor to each digit position and change the digit by scrolling with the Adjust button.

NOTE - A limit of 1510 l/hr should be set as 01510 (the leading zeros are important).

Because temperatures are recorded to 0.1 Deg C, a Limit of 15.7 Deg C should be established as 10157. The leading 1 is used to denote temperatures above 0.0 DegC. If you wish to set a temperature below 0.0 DegC, take the desired temperature away from 1000. E.g. to set a temperature of -2.8 DegC, 1000 - 2.8 = 997.2. In this case set a value on-screen of 09972.

After the last digit has been set, press Set to show the following screen:

Note – the cursor is under the hour of the start (S) time. If the Alarm is to be active all day, leave the start time and end (E) time as 00:00 and 00:00 (midnight to midnight). Otherwise use Adjust to edit the times and then press Set to move to the next time.

After the times have been edited satisfactorily, the final press of Set will move the cursor under the 1 of Sunday (S). These are the days of the week with either a 1 for active or a 0 for inactive under each one. Use Adjust to change from 1 to 0 as necessary, then press Set to move to the next day.

After the final press of Set, the following screen will be shown:

S<u>00</u>:00 SMTWTFS E00:00 1111111

Press Adjust to edit this Alarm, or press Set repeatedly to scroll through to Alarm 6. After Alarm 6, press Set to get to the following screen:	Edit Device Alarm 2
If Yes (Y) is shown the Daily Data Feed is enabled and an SMS will be sent daily just after midnight with the day's data that is to be graphed on www.general-alert.com. No (N) will disable this feature. Use Adjust to switch between these two options. If no changes have been made, pressing Set will show the Options / Pod Edit screen as detailed above. If any changes have been made to any of the Alarms, pressing Set will show the following screen:	Edit Device Data Enabled Y
If you do not wish to save the changes you have made to the Alarm settings press Set. If you do wish to save the changes, press Adjust (Y). An SMS (or message via the Ethernet connection) will be generated and be sent from the Base Unit to www.general-alert.com. The new setting will be reflected on the relevant POD page.	Save Changes? Y N



Removing PODs

BECAUSE OF THE LEVEL OF INTRINSIC RELIABILITY BUILT INTO THE GENERAL ALERT SYSTEM, DO NOT REMOVE PODS WITHOUT FOLLOWING THE CORRECT PROCEDURE DETAILED BELOW

Every few seconds the Control Board will check the status of each POD in its memory. It needs to do this to ensure that any new event (low level, a temperature that is too high, a pH that is too low etc.) will be seen and the event acted upon immediately. If the Control Board can not find a POD that it believes should be present, it will raise an Error Log which will be seen by General Alert Ltd. This Error will be raised daily until the situation is resolved. The raising of an Error log will cause Tokens to be deducted from the user's Account.

<u>Temporary Removal of POD</u> – If a POD needs to be removed temporarily to change its position, re-wire the connection wires etc., first turn off the power to the Base unit using the On/Off switch on the side of the Base Unit. The POD can now be removed. Replace the POD onto the Back Plane before turning the Base Unit back on again.

Permanent Removal of POD -

Start from the Operating Screen shown on the right.	General Alert m 28 Aug 10 09.44
Press Set, Wait will be shown	General Alert Wait
Press Set (Options)	General Alert Start Options
Press Set	Options Pod Edit >
Press Set	Options Set Clock >

Press Set	Options
	Add New Pod >
Press Adjust (as the Remove POD option is the one we are looking for).	Options
	Remove POD >
On this Base Unit, 3 PODs have been found.	3 PODs found
Pressing Adjust repeatedly scrolls through the PODs found in the base Unit. When the POD that needs to be removed is shown, press	T0002008(Temp) >
Set.	
Pressing Adjust (Y) will remove the chosen POD. The following	3 PODs Found
screen is then shown:	Y Remove N
Press Adjust to list the remaining PODs in the Base Unit. Repeat the	Options
steps above to move any other PODs.	Remove POD >
Pressing Set on the screen shown on the right will show:	
	General Alert
Pressing Adjust will return the Base Unit to the Operation Screen.	
	Start Options

Notes:

PODs can be added to the Base Unit Control Board memory by using the procedure detailed in the section Adding PODs.

If, at any stage in the Removing PODs procedure, you do not press a button for 30 seconds, the system will automatically return to the Operation Screen.



Activating Alarms De-Activating Alarms

If a POD detects a state that exceeds a parameter set by the User, an Alert SMS will be sent from the Base Unit to the GA SMS Service. If an Ethernet connection is being used, an electronic message will be sent via the Ethernet to the General Alert Core for processing. Depending on how many people have been listed online under the heading "Users Notified on POD Alerts", SMS Alerts and/or emails will be sent to those people.

The response time from the exceeded parameter being detected to the Alert SMS being received by Users is between 3 and 20 seconds depending on network speed and availability (see Terms and Conditions on www.general-alert.com).

The following scenarios are possible:

Event	Result / Action
The POD continues to see the same exceeded parameter with no change after 30 minutes	Further Alerts will be sent to users each 30 minutes
The exceeded parameter is rectified within 30 minutes of the last Alert being raised	No further SMS Alerts will be raised
The User wishes to cancel the Alerts pending getting the problem rectified (parameter returned to within expected range). This action can also be used to de-activate an alarm at any time if it is not needed.	A User sends an SMS to the GA SMS Service in the format: 9999.0.1 Where: 9999 is the serial number of the POD0 is to 'turn off' .1 is Alarm 1 (as set on www.general-alert.com) A confirmation SMS will be returned to the User that the Alarm has been cancelled.
	the POD Alarm section on the web. THE ALARM WILL REMAIN CANCELLED UNTIL RE-ACTIVTED
The User wishes to Re-Activate the Alarm	A User sends an SMS to the GA SMS Service in the format:
	9999.1.1



Where: 9999 is the serial number of the POD1 is to 'turn on' .1 is Alarm 1 (as set on www.general-alert.com) A User can also check the "Active" box on
the POD Alarm section on the web.

The Clock

The Base Unit has an internal clock that has an independent power supply. This clock battery has a life of more than 10 years.

Local time

The Base unit clock should be set to LOCAL TIME. Where possible the clock will be pre-set to local time before the Base Unit is shipped from our manufacturing facility.

Adjusting the clock

If the clock needs to be adjusted – for example for daylight saving changes – follow this procedure:

From the Operating Screen, press Set The Base Unit will disconnect from the mobile phone network. If you do nothing more, the screen will revert to the operating screen after a few seconds.	General Alert Wait
Press Set (Options) If you delay pressing Set, the Base Unit will return to the Operating Screen (after "Modem Init" and "Finding Network") so that no data is missed unnecessarily.	General Alert Start Options
Press Set	Options Pod Edit >
Press Adjust to choose the clock adjustment feature.	Options Set Clock >
If it is the day of the week that you need to change, press Adjust repeatedly to scroll through Monday, Tuesday etc. When the correct day is showing, press Set	Tue 08 Dec 11 Set Day Next

If it is the date that you need to change, press Adjust repeatedly to scroll though 09, 10 etc. When the correct date is shown, press Set	08 Dec 11 16.09 Set Date Next
If it is the month that you need to change, press Adjust repeatedly to scroll though Dec, Jan etc. When the correct month is shown, press Set	08 Dec 11 16.09 Set Month Next
If it is the year that you need to change, press Adjust repeatedly to scroll though 09, 10 etc. When the correct year is shown, press Set	08 Dec 11 16.09 Set Year Next
If it is the hour that you need to change, press Adjust repeatedly to scroll though 04, 05 etc. When the correct hour is shown, press Set Note: 04.00p is 16.00	08 Dec 11 16.09 Set Hour Next
If it is the minutes that you need to change, press Adjust repeatedly to scroll though 39, 40 etc. When the correct minutes are shown, press Set	08 Dec 11 16.09 Set Min Exit
If you need to make further changes to the clock press Adjust, otherwise press Set to exit the clock adjustment feature.	08 Dec 09 16.09 Set Clock >
Before the Base Unit returns to the Operating Screen, the Modem will initialize, then a network search will be performed.	 Init Modem Finding Network Operating Screen
The Operating Screen	General Alert 08 Dec 11 16.09

Radio

Radio links can be used to connect the base unit to any number of slave units. All units will be connected using a radio wavelength that all of the units will tune to. Currently (March 2012) Radio modules are available with strengths to cover 800m and 4km.

There needs to be a line of sight between the aerial connected to the Base Unit and each of the aerials connected to the Slave Units. Trees and other objects in the line of sight will affect the performance of the radio connection.



The Web Interface - Accounts

A major feature of the General-Alert system is the ability to interact with sensors on the web regardless of where in the world the sensors are located.

Much of the web site www.general-alert.com is self explanatory. Where a concept needs explanation, there are information tags (i) that can be clicked.



In order to sign into the User Account pages to interact with Base Units and PODs, a Username and Password will be needed. On the General Alert Login page click register and enter full details to establish a new Account. A new Account should only be opened by the person who will be the Account Holder with the authority to take legal and financial responsibility for the Account (for definitions of User levels go to www.general-alert.com/Support/definitions).

A User Account will need to be set up before equipment can be supplied as equipment has to be securely linked to a specific account.

On the Account Overview page, there is a summary of the Account details as well as a summary of the communications activity on the Account (View). Also shown is the balance of Tokens remaining on the Account as well a purchase-online system for topping up Tokens on the Account (not currently activated Dec 11).

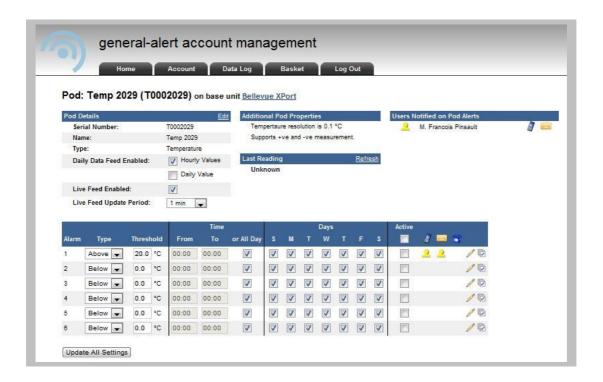
General Alert is a Pay-as-you-Go system. Tokens are purchased in advance of usage. Each Token has a value of GBP 0.01. Any expense concerning the running of the General Alert system (SIM card rental, Alert message cost, daily data transfer and graphing costs etc.) is automatically deducted in terms of Tokens from the User Account. Costs of each activity type vary. The cost structure may vary from time to time as deemed necessary by General Alert Ltd. Full Terms and Conditions on www.general-alert.com/Support.

Additional Users and Super Users (see www.general-alert.com/ Support/ definitions/User) can be added and their details edited. These are the people who will receive Alert messages, check on data graphing and make changes (if permitted) to the parameter settings for all Base Units and PODs allocated to an Account.

All of the Base Units allocated to the Account can be seen on the Account Overview page. By clicking on these, each Base Unit can be seen with all of the POD details.



The Web Interface – PODs



<u>POD Details</u> – POD details can be edited so that each POD can have a User recognisable name rather than just its unique Serial Number. In this example the name remains as Temp2029.

<u>Daily/Hourly Data Feed Enabled</u> – Many POD types have the useful function of being able to transmit data on a daily basis to www.general-alert.com. To activate this facility for POD types like flow, temperature, pH, humidity etc. check the Daily Data Feed Enabled box. This is POD specific so does not apply to all of the PODs in a Base Unit.

Live Feed Enabled – If the Base Unit is fitted with an Ethernet connection, a Live Feed of data can be enabled to be shown under the Data Log tab.

NOTE – Because the POD in the Base Unit needs to be told that it is to send a daily data feed, it is necessary to click on (and then confirm) the Update Alarm Settings button. A message will be sent to the POD to activate the daily data feed function. The screen will return to the POD screen when confirmation has been received from the POD that the new request has been accepted.

The Daily Data feed will be in the form of either one SMS per POD(Hourly Values) or one SMS per number of PODs (Daily Values). The SMS will be sent from the Base Unit a few minutes after midnight every day local time.

If the Base Unit has an Ethernet connection, hourly and daily values are sent electronically over the internet rather than by SMS.

<u>Users Notified on POD Alerts</u> – Any of the Account Holder, Super Users and Users can be notified with an Alert when a critical event occurs (an Alarm setting is exceeded). Click on any of the boxes by each of the Users for them to receive notifications of Alerts by SMS or email or both.



Only Users that have been fully Registered (www.general-alert.com/home /login / Register) will be shown in the list of Users.

Any changes need to be confirmed by clicking on the Update Notification List. There is no cost implication with this action.

<u>Last Reading</u> – By clicking on Refresh and confirming, a message will be sent to the POD to get an instantaneous reading from the sensor attached to that POD. The reading will be displayed normally within 20 seconds.

This is the web equivalent of sending a Status Report request from a mobile phone in the format 9999.6 (serial number.6) to the GA SMS Service on +44 7786 204380 (see below).

Alarm Settings – This is the section where Alarms can be set for specific PODs.

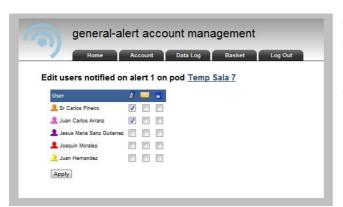
Six Alarms can be set for each POD. This enables on POD (sensor) to be activated when different parameters are exceeded during different times and on different days and notified to different sets of people.

The Alarm Type is specific for each POD type. A l/hr (or gal/hr) value can be set for flow PODs, a Deg. C (or Deg. F) value can be set for temperature PODs etc.

If the Alarm is to be active for a full 24 hour period (the default setting), check the All Day box. Otherwise un-check the All Day box and select the Active From and To boxes based on the 24hr clock.

The default setting for the days of the week (M = Monday, T = Tuesday etc.) is for Alarms to be active on all days of the week. If there are days when the Alarm is not required (weekends for example), un-check boxes as required.

The Active box needs to be checked if the Alarm is to be activated. If the box is not checked and the Update Alarm Settings box also checked and confirmed (see below) the Alarm setting will not be aced upon.



The Edit Users Notified facility allows different combinations of Users to be notified of Alerts y SMS or email.

The User combinations can be copied to all or some of the 6 Alarms as required.

NOTE – It is very important to remember to click on (and confirm) the Update Alarm Settings box after changes have been made to Alarm settings. By clicking on this box the POD inside the Base Unit will know when to raise an Alert the instant a parameter is exceeded.



The Web Interface - Data Log

The Data Log will show all of the Base Units allocated to the Account. By selecting one, you will see the period over which data has been collected, and be able to select a time period for the graphical display for any of the PODs listed for that Base Unit.



Many PODs will have the option to display either hourly or daily values.

Check the boxes against all of the PODs that you want to be graphed together, and then click on Plot.



NOTE – If you do not see the data displayed for PODs that you were expecting, ensure that the Daily Data Feed Enabled box is checked on the POD page, AND that the Update Alarm Settings box has been checked and confirmed.

If a Base Unit is fitted with an Ethernet connection there will be a Live Data option shown. Data will be shown as in the graph on the right.



The Web Interface – Base Units

Each Base Unit has a unique Serial Number. But by editing the details of the Base Units they can be given a name that is recognisable to the User. For example, if Base Unit M5999 is in a production area, it could be renamed as "Packing Line A".



All of the PODs allocated to a Base Unit are listed. Click on any of the PODs to edit Alarm settings etc.

If a POD is not listed that you expected to see, it may be that the POD was physically pushed into a socket on the Base Unit, but the Add Pod routine was not followed. See Adding PODs section in these Instructions for guidance.



Status Reports

To obtain the current status of any sensor connected to a POD, simply send an SMS message to the GA SMS Service (+44 7786 204380) in the following format:

9999.6

Where 9999 is a POD with serial number 9999 and .6 is the request for a Status Report. Substitute the correct serial number for your own situation. <u>Do not</u> include the letter (T, P etc.) in the Status request, nor any leading zeros in the serial number.

The Status Report will be delivered in the following format by SMS within (normally) 20 seconds:

'Pond Temp' (T000999). Reading = 12.9 at 28 August 2011 10:58 (local time)

<u>Security</u> – A Status Report request will only be acted upon if it is received from a mobile telephone number of a registered User on a General Alert Account. Also, the request will only be processed if it is for a POD registered to the Account for which User is also registered.

Note - Status reports can easily be obtained on the POD page on the web by clicking on Refresh on the Last Reading section.