



User and
maintenance
instructions

VAC

over- and underpressure monitor/logger





Dealer

© Copyright 2020, Dehaco B.V.

All rights reserved. The reproduction or publication of this document, in whole or in part, in any form or by any means, is forbidden without prior written permission from Dehaco BV. This also applies to the associated drawings and schematic diagrams, where applicable. Dehaco B.V. reserves the right to make changes to products and/or parts thereof at any time and without prior notice. This also applies to the contents of these instructions. For information about installation, maintenance and repair that you cannot find in these instructions, we advise you to contact your supplier's technical department. Despite the fact that these instructions have been composed with the utmost care, Dehaco B.V. accepts no liability for any errors in these instructions or the consequences arising from these errors.

List of contents

1. Disclaimer, safety and warnings	4
2. Introduction	5
2.1 Operating the VAC	6
3. Installation and use	8
3.1 Start measuring	8
3.2 The keyboard	8
3.3 Entering the alarm values	9
3.4 During measuring	9
3.5 Printing the measuring values	11
3.6 Battery	11
3.7 The information screen	12
3.8 Exporting via USB	12
4. Error reports	14
5. Text message and call function	16
5.1 Setting the text message/call functionality	16
5.2 Overview of text messages	18
6. Using VAC Cloud	20
6.1 Offline use (USB to VAC Cloud)	20
6.2 Online use (Automatic processing)	21
7. Outputs	22
8. Settings	23
9. Menu structure	24
10. Placing printer paper and SIM card	25
10.1 Replacing the printer paper	25
10.2 Inserting the SIM card	26
11. Resolving problems	28
12. Reparation, service and maintenance	28
13. Specifications	29
14. Declaration of Conformity	30

1. Disclaimer, safety and warnings

This product has been designed with ease of use and safety as the priorities. The safety instructions must be taken strictly into consideration for safe operation.

Disclaimer, safety instructions and warnings

- The safety instructions must be strictly followed during all stages of installation, operating and maintenance. Non-compliance with the safety instructions and warnings goes against the safety standards expected from this product.
- Please contact the supplier if you have any doubts about the safe use of this product.
- Save these safety and operating instructions for future use.
- Only qualified personnel are permitted to work with the pressure monitor. Precise knowledge of the contents of these instructions is the minimum requirement for working with this apparatus.
- The legal stipulations valid at the place of use apply to the operation of the machine.
- It is the technician's responsibility to guarantee safe operations. A careful check of the installation, measuring and alarm set points is a requisite.
- The pressure monitor must be used in an appropriate environment (well-ventilated, ambient temperature 0°C to +50°C) and never in the presence of dust, acids, vapours, explosive or flammable gasses. Never expose the apparatus to the weather.
- When using, put the power cable plug in a socket that complies with applicable prescription in regard to shape, voltage and frequency.
- Do not use any accessories that are not recommended for this product.
- Do not expose this product to moisture or rain while open so that the risk of fire or electrocution is avoided. Make sure that you never spill liquid over the product.
- When there is a fault in the working, switch off the apparatus and secure immediately.
- Measuring hoses must not be bent or damaged.
- Place the appliance on an even stable surface before use. Do not expose the apparatus to vibrations or jolts during use.
- Never blow into the apparatus, or suck it or start the apparatus with any other type of pressure.
- Make sure that the speaker is not too close to the ear as it could damage the hearing.
- The manufacturer accepts no responsibility or liability arising from or in any way involving (data) user of the pressure monitor, the website or the content thereof.

2. Introduction

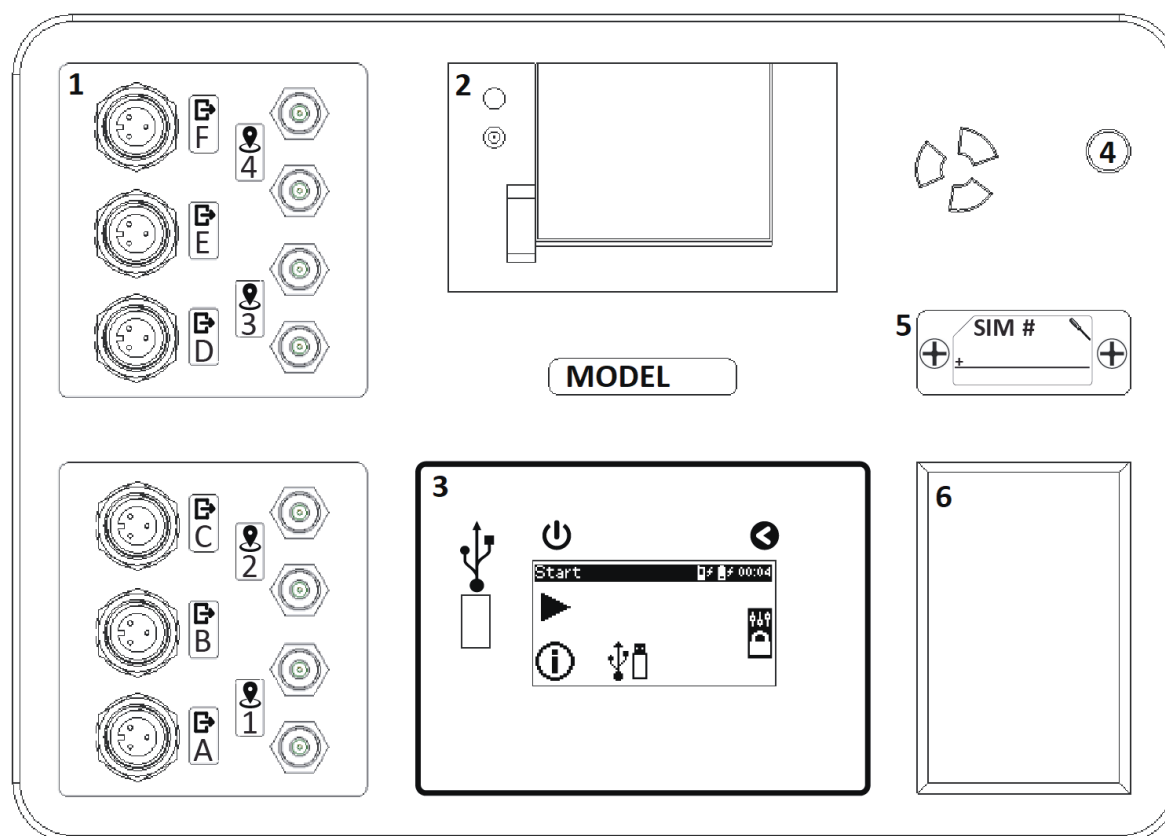
The VAC is an over- and underpressure monitor/logger. The apparatus has 1 to 4 measuring channels depending on the model. The apparatus has 3 or 6 adjustable outputs.

MODEL	NUMBER OF CHANNELS (ZONES)	NUMBER OF OUTPUTS
VAC-1C	1	3
VAC-2C	2	6
VAC-4C	4	6

Each model can be delivered out as VAC or VAC Cloud edition. The last can use the VAC Cloud (online platform) by uploading files or having a direct connections with the monitor.

Log details can be exported via USB and printed out live by the built-in printer.

The drawing below shows the various components of the VAC:



[1] Measuring channels (zones) 1 to 4. Outputs A to F. The number of in/outputs depends on the model.

[2] Thermal printer


[3] Operating module

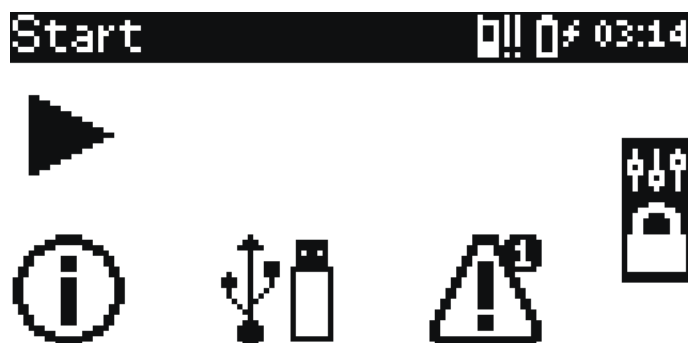
[4] Adaptor connection

[5] SIM card






[6] Storage space for adaptor


2.1 Operating the VAC

In order to use the pressure monitor, always connect the adaptor for normal use. Start the VAC by pressing the power button  at the top of the screen. The main screen is displayed when started.







The main screen includes the following icon:

-  Start a measuring (see chapter 3.1)
-  USB menu (see chapter 3.8 for an explanation of how to export measurements)
-  Contact and appliance information
-  Log in (for changing general settings and text messages and output configurations)
-  This icon appears when an error has occurred. The error screen can be opened (see chapter 4)

The VAC uses a touch screen. Pressing the icons will open the required screen. It is possible to return to the previous screen by using the back-button  at the top of the screen.

The topmost bar on the screen shows the name of the screen that is displayed at that moment.

The icons in the top right show the status of the apparatus:

-  Status of the battery. The filling in the icon shows how full the battery is.
The battery is almost empty when it flashes. The icon on the right shows the status:
 -  Adaptor is connected. Battery is charging.
 -  Battery is in order.
 -  Battery error. Temperature is too low/high or battery is defect.



Status of the modem. The status is only visible when the modem is activated in the settings menu (see chapter 7). The icon on the right shows the status:



Modem error. Check settings for the modem.



Modem does not work due to a problem with the power supply.

1. 2. Introductie



Modem is initialising.



Searching for network.



No signal, but is connected to network.



Modem is calling in.



Modem is sending an SMS.

1 to 3 lines on the modem show the signal strength of the covered GSM network.



Status of the printer. The status is only visible when the printer is activated in the settings menu (see chapter 7) and measuring is active. The icon on the right shows the status:



The printer does not work due to a problem with the power supply.



There is a problem with the printer paper.



The printer is starting up.



The printer is functioning properly.



Status of VAC Cloud. The status is only visible when 'Cloud' is activated in the settings menu (see chapter 7) and you have purchased a Cloud model. The status is shown within the icon:



No connection.



Connecting.



Connected with VAC Cloud.

NOTE: VAC Cloud can only connect if the modem is connected.

Pressing the power button for at least 2 seconds will switch off the VAC. A window will appear to confirm that the appliance is switched off.

The current measuring will stop when the appliance is switched off. The measuring will not resume in case the appliance is switched on.

3. Installation and use

3.1 Start measuring

The pressure measurement is a differential measurement. One hose is connected for measuring the atmospheric pressure, the other hose measures the pressure in an enclosed area. Connect the hose to the required channel (🔌; see chapter 2).

Because it involves a pressure differential measurement, it is not important which hose is put in which area. When the VAC is in one of the two areas, the hose for that area does not need to be connected.






Press ▶ in order to start a new measuring. A keyboard then appears to enter the location.

3.2 The keyboard

A keyboard appears on the screen for entering such data as names, locations and telephone numbers. The keyboard looks like this:



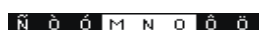
Select the keyboard on the bottom line. Furthermore, the shift button, the space bar and the backspace button can be found there:

-  Go to the alphanumerical keyboard
-  Select special symbols
-  Shift key. Capital letters are typed when this key is pressed (key becomes white)
-  The space bar
-  Backspace. This key removes the last typed letter

Select the group in which the required symbol can be found in the alphanumerical display:



Type the symbol when the required group has been selected:



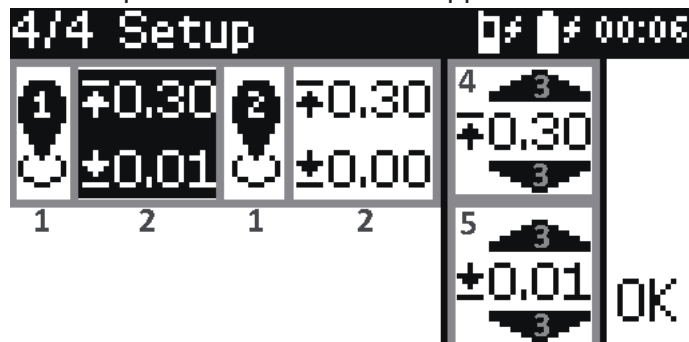
The white symbols are the standard symbols. The black ones are special symbols.

Press **OK** when the required text has been typed.

3.3 Entering the alarm values

When the three lines have been entered, the setup screen in which the alarm values can be set per zone will follow.

The setup screen for the alarms appears as follows:



Alter the settings as follows:


- [1] Press the zone to turn alarms on (🔒) or off (🔓) in that zone.
- [2] Press the alarm values to select/de-select them per zone.
- [3] Press ▲ / ▼ to increase the alarm value.
- [4] The value of the upper pressure alarm level.
- [5] The value of the lower pressure alarm level.

Press 'OK' to start measuring.





3.4 During measuring









The values of the measuring channels appear on the screen during measuring and, if set, will be printed live (see chapter 7 for adjusting the settings).








The right-hand side of the screen shows the status. When an alarm situation occurs, the  icon appears and the AMS PM will give an audible alarm signal. Pressing the icon accepts the alarm and the alarm signal is suppressed.


The bottom right of the screen shows the status of the appliance.




-  Status of the battery. The percentage under the battery shows how full it is. The battery is almost empty when it flashes. The icon on the right shows the status:
-  Adaptor is connected. Battery is charging.
 -  Battery is in order.
 -  Battery error. Temperature is too low/high or battery is defect.

-  Status of the modem. The status is only visible when the modem is activated in the settings menu (see chapter 7). The icon on the right shows the status:
-  Modem error. Make sure the modem settings are correct.
 -  The modem does not work due to a problem with the power supply.
 -  Modem is initialising.
 -  Searching for network.
 -  No signal, but is connected to network.
 -  Modem is calling in.
 -  Modem is sending a text message.

1 to 3 lines on the modem show the signal strength of the covered GSM network.

-  Status of the printer. The status is only visible when the printer is activated in the settings menu (see chapter 7) and measuring is active. The icon on the right shows the status:
-  The printer does not work due to a problem with the power supply.
 -  There is a problem with the printer paper.
 -  The printer is starting up.
 -  The printer is functioning properly.






-  Status of VAC Cloud. The status is only visible when 'Cloud' is activated in the settings menu (see chapter 7) and you have purchased a Cloud model. The status is shows within the icon:

-  No connection.
-  Connecting.
-  Connected with VAC Cloud.

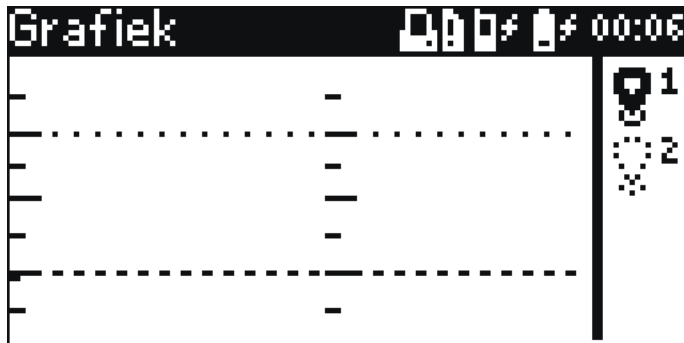
NOTE: VAC Cloud can only connect if the modem is connected.

By touching the screen the main screen appears. Measuring continues in the background.

The following icons can be seen on the screen :

-  Stop the current measuring.
-  Go back to the overview screen displaying current measuring values.
-  View a graph of the recent measuring values.
-  Contact and appliance information.
-  [Optional] This icon appears when an error occurs and the error screen can then be opened (see chapter 4).

The graph appears as follows:



The selected zone (📍) for which the graph is shown can be seen on the right. Pressing the required zone will show its values on the graph.

3.5 *Printing the measuring values*

Measuring values are continuously printed during measuring according to the set interval (see chapter 7). The VAC will work on the back-up battery if the adaptor voltage fails. The printer will be switched off. When the is adaptor voltage has returned, the printer will start to print again from the last printed value.


The printer will switch off if the paper runs out. After refill, the printer will continue printing from the last printed value.

3.6 *Battery*

The VAC has a battery. Measuring will continue if the adaptor is disconnected, however an error report will be shown and a text message will be sent.


Measuring will stop when the battery is empty. Measuring will resume when the voltage returns.

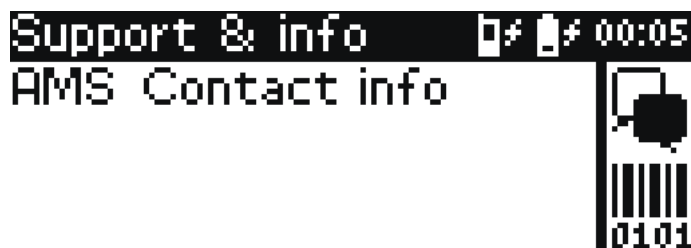
3.7 The information screen

Press  to open the information screen.

The information to be shown can be selected on the right:

 Contact information

 Appliance information




1. 3. Installatie en gebruik



3.8 Exporting via USB

The measuring values can be exported when measuring is stopped.

If you purchased a VAC Cloud model, please refer to chapter 6 because this chapter is irrelevant for your device.

Press  in the main menu to show the USB menu. Connect a USB storage device (FAT/FAT32 file system) with the USB port. The logs can be exported when the USB is initialised. They will be saved on the storage device in .csv files and can be read in a programme such as Excel. A log comprises 2 csv files. One file contains the header, the other the measuring data.

The map "VAC-xC x" followed by the serial number will be made on the storage device. The 'x' shows the VAC version. Two .csv files are made in this folder with the names "YYYY-MM-DD hh_mm_ss Header.csv" and "YYY-MM-DD hh_mm_ss Data.csv":

YYYY Year
MM Month
DD Date
hh Hour
mm Minutes
ss Seconds

4. Error reports

The following data is included in the header:

- Name
- Serial number
- Software version main module
- Software version I/O module
- Date
- Calibrated until (date)
- Unit
- High/Low alarm values various zones
- Measuring location


The “data” file contains all the measuring data:


- Log number
- Measuring date and time
- Log type (see table below)
- Data
- Measuring values per zone (only filled by logtype 4)

Log type	Data	Description
0	Version number	Started up, software version main module in data field
1	Version number	I/O module started up, software version I/O-module in data field
2	n/a	Measuring started
4	n/a	Measuring value per zone
5	Status charger	0: Charger available 1: Charging 2: Charging complete 3: Error in charging circuit 4: Adaptor error (not connected) 5: Battery error 6: Temperature too high 7: Temperature too low
6	Status printer	0: Printer not active 1: Adaptor not connected (printer will not work without adaptor) 2: Paper error 3: Printer started up 4: Printer ready for use
7	n/a	Measuring stopped

A file named “pmcloud/VAC-4CVAC-xC x YYYY-MM-DD hh_mm_ss dump.bin” is made on the storage device per export for service purposes.

4. Error reports

If an error occurs,  icon will appear on the main. The icon will display the number of errors. Pressing the icon will show the report.

Error reports are shown audibly and visually every minute. Pressing  on the error report screen will accept the error reports and the audio and visual signals will stop.

The table below gives an overview of the error reports and their description/solution.

Error message	Description/solution
Modem SMS buffer full	Too many text messages are coming in. Check that the call.
Modem Pin needed	PIN code for the SIM card is incorrect. Enter it again.
Modem Puk needed	PUK code for the SIM card is incorrect. Enter it again.
Modem SMS error	Error while sending text messages. Tap the message to remove it. Check the service centre number and the call credit.
Modem SMS service centre	Number of the text message service centre not entered or incorrect. Enter the number of the text message service centre.
Modem No SIM	Put the SIM card in the holder.
Modem Network error	Mobile phone module is not covered by telephone provider.
Modem Fault	There is a fault in the modem. Tap the message
Modem Unknown	The modem does not function as expected. Send the appliance back to the supplier.
Printer No paper	Printer paper not available or incorrectly installed (see paragraph 9.1).
Printer Connect adaptor	In order to use the printer, the adaptor must be connected.
Power supply Connect adaptor	The AMS PM requires an adaptor to work properly. Connect the adaptor.
Calibration expired -Date-	The appliance must be calibrated again. Send the appliance back to the supplier.
Power Supply Errors: -Code-	Code 6: Temperature too low Code 7: Temperature too high With other error codes, send the appliance back to the supplier.
Internal error -Code-	The appliance does not function as expected. Send the appliance back to the supplier.
Memory almost full x days left	Internal memory almost full. Export or upload the data to prevent data loss.

5. Text message and call function

Besides error message the device can also generate notifications. These notifications only trigger a single audible notice.

Message	Description/solution
Reports	Local stored data not yet exported/uploaded.
Export reports	See chapter 3 for more information.
<i>The following messages apply only if you have a VAC Cloud (and activate Cloud)</i>	
Reports Synchronizing..	Local stored data not yet synchronized with VAC Cloud. Connect with VAC Cloud or export and upload the data using USB.
VAC Cloud Server unreachable	Check your connection to internet. Modem must be connected with network; SIM-card needs to be data-enabled (at telephone provider); Verify APN-settings.
VAC Cloud Roaming error	Your SIM-card needs roaming to be enabled. This can be changed in settings. NOTE: Enabling roaming may result in extra costs.
VAC Cloud GPRS fout	SIM-Card/network doesn't provide in sending/receiving data. Contact your provider.
VAC Cloud Fout: x	An unexpected error occurred. Contact your supplier.
VAC Cloud Verbinden...	Connecting to VAC Cloud.



The following icons could appear behind the error/notice:

- ↺ Check again that the error situation is not still occurring.
- > Change the settings behind the report mentioned
- ✓ Accept the error report

5. Text message and call function

The VAC has a mobile phone module to obtain information about the status of the system, measuring and any alarms via text messages and calls. The modem must be started in the settings (see chapter 7) in order to use the text message and call function.

5.1 Setting the text message/call functionality

Which text message and call functions are active will be specified per contact person. Add contacts via the settings screen. Log in via the main screen  and press  to go to the contact list.

The contact screen looks like this:








Add contacts by pressing **+** in the right-hand column. The input screen for a contact person appears as follows:




Enter the name and telephone number by pressing the relevant field. In order to check the functionality, a test text message will be sent to the number when a telephone number is added.

5. Text message and call function

The bottom line shows which call and text message functions are active for this contact by means of icons. The sliders () show the priority (0 ! !!), or whether that function is active for this user. The icons are classified as follows:

-  Call this contact when there are reports. Call priority classification:
0: This contact will not be called.
!: Low priority, this contact will be called if contacts with higher priority are not obtainable.
!!: High priority, this contact will be called first.
-  Text this contact when there are reports. Text message priority classification:
0: This contact will not be sent a text message.
!: This contact receives a text message when measuring is started/stopped and when there are alarms.
!!: This contact receives text messages for both measuring and system reports
-  Forward messages sent to the mobile phone module of the VAC (for example call credit status or messages from the provider) to this contact.
The slider () to turn this function on/off is shown on the right of the icon.
An '0' in the slider indicates that this function is turned off, a '1' indicates that this function is active.

Contacts can be disabled by pressing the  icon. Disabled contacts will not be contacted at all.


Contact persons can be removed by pressing the  icon.

The contacts overview screen shows the activated functions by means of small icons below the name.

NOTE: Settings stated above can result in additional costs.

5.2 Overview of text messages

The list below shows the various text messages that the VAC can send to contacts.

Report	Text message	Priority
Monitoring started	Monitoring started. Location: -Entered location- Sms 'Disable' to disable the messages	! & !!
Monitoring terminated	Monitoring has ended. Location: -Entered location-	! & !!
Alarm reports	Alarm notice (time that alarm is active) Zone 1 measured pressure Output 'alarm low/high' active Zone 2 measured pressure Output 'alarm low/high' active Zone 3 measured pressure Output 'alarm low/high' active Zone 4 measured pressure Output 'alarm low/high' active Text 'Accept -code-' to accept	! & !!
Alarm accepted	Alarm(s) accepted By: -contact- or -location-	! & !!
Alarm accept code error without new alarm	Accept code unknown. No (new) alarms present.	! & !!
Alarm accept-code error with new alarm	Accept code unknown. Zone 1 measured pressure Output 'alarm low/high' active Zone 2 measured pressure Output 'alarm low/high' active Zone 3 measured pressure Output 'alarm low/high' active Zone 4 measured pressure Output 'alarm low/high' active Sms 'Accept -code-' to accept	! & !!
Alarms resolved	Alarms resolved.	! & !!
Message forwarded	FWD (telephone number of sender): -contents of forwarded message-	

Report	Text message	Priority
Switch off reports	Thank you for your message. Notifications are disabled. Sms 'Enable' to enable the messages again	! & !!
Switch on reports	Thank you for your message. Notifications are enable. Sms 'Disable' to disable the messages.	! & !!
Test message	AMS PM x – product number & serial number Test message. Your telephone number has been correctly entered	! & !!
Status report	Status System OK/Error Power Adaptor/Battery Printer OK/no paper Zone 1 measured pressure Output 'alarm low/high' active Zone 2 measured pressure Output 'alarm low/high' active Zone 3 measured pressure Output 'alarm low/high' active Zone 4 measured pressure Output 'alarm low/high' active	!!

- The '*' in the alarm reports indicates which alarm is new since the last report.
- Status reports are only sent when measuring is active. They are sent every 24-hours from the moment measuring is started or when there is a system alarm.
- An '*' after the status report indicates that the status has changed since the last message sent.
- The number of zones shown depends on the involved VAC model.
- When a contact accepts an alarm, this person will be approached first from now on (text/call).
- 3-hours after the alarm is accepted, a text message will be sent every 30 minutes if the alarm situation is still ongoing.
- The person with the highest priority will be called twice. The next person will be called if contact is not possible. The list is then used on the basis of priority.
- You can always send a message containing the text 'Now' to the device to receive the current status of the system.

When 'Cloud' is enabled, each SMS contains a link to the app/website to view the live status of the device (when online).


6. Using VAC Cloud

If you've purchased a VAC Cloud edition, the processing of data is different to a non-Cloud model.

6.1 *Offline use (USB to VAC Cloud)*

USB Export

When 'Cloud' (modem settings) is disabled, you don't have a working SIM-card or no working internet connection; it's possible to upload your logs via USB to VAC Cloud to view your and get reports.

Press  in the main menu to show the USB menu. Connect a USB storage device (FAT/FAT32 file system) with the USB port. The logs can be exported when the USB is initialized.

Every export action creates a file name "pmcloud/VAC-xC x YYYY-MM-DD hh_mm_ss.bin" on the storage device. This file (or multiple files present on the storage device) can be uploaded when logged in on VAC Cloud.

VAC Cloud Synchronization

Logs on the device will stay on the VAC till processing is confirmed on VAC Cloud. When online this is done automatically, but when using VAC offline this is done with a file generated by VAC Cloud.

After uploading logs to VAC Cloud a SYNC-file will be offered (for example: vac201809111.sync). This place can be stored on the storage device. This file will be processed automatically when 'Export logs' is executed. A single .sync file is valid for all your VAC products (here for VAC Cloud only generates a single file).

The sync file will result in automatic deletion of older logs (already processed on VAC Cloud) so there is space for new logs. If required at any time, the sync file can be acquired on VAC Cloud on the 'Logs' page.

Firmware update

The newest firmware is available on VAC Cloud on the 'help' page. This way you can perform an update to the most recent version of your VAC. Place the file on your USB storage device and insert it in the VAC. Choose 'Update firmware' in the USB screen to perform the update.

6.2 Online use (Automatic processing)

When the option 'Cloud' is enabled on your VAC, the device will connect to VAC Cloud.

NOTE: A SIM with data transmission is mandatory to work online. Costs may apply and the VAC needs to be configured (see chapter 8) as specified by your telephone provider.

After configuration the device will connect to VAC Cloud and maintain a connection. When errors occur, please consult the error screen (see chapter 4).

The following features apply when there is successful connection to VAC Cloud.

Live monitoring

Monitor your (live) devices on VAC Cloud or using the app. Both provide an overview of all your devices and gives you detailed information about each device. Messages send via SMS (if configured) will contain a link you a device which opens de app/website to view live data when an event occurs.

Alarm accept is also available on the website/app.

Automatic processing of logs

Each VAC continuously sends logs to VAC Cloud. This data is stored and automatically process resulting in PDF/CSV and send via e-mail (if configured). VAC Cloud also provides in tools online to view report data and download on request.



Synchronization can take some time (for example when you have a bad connection) to catch up after finishing a test. Whilst synchronizing a message is shown in the error screen (Reports – Synchronizing). Only when this message is gone, you can be sure that all data is available online.

If you can't get a connection, logs can still be manually uploaded using USB, refer to the chapter 'offline use'.

Firmware updates

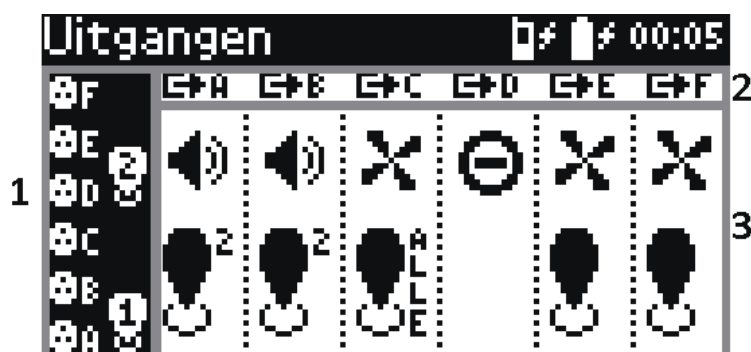
A online VAC is assured of having the newest available firmware since this is automatically updated. When a firmware update is available on the VAC you will receive a message. A user can decide to postpone the update in this screen. In this case the message can be found in the error screen as a notice.

7. Outputs

Log in via the main screen in  to set the functionality of the outputs. Go to the settings screen by pressing .

The correct accessories must be acquired in order to be able to use the outputs.

The settings screen for the outputs appears as follows:








[1] Overview of available outputs and inputs (incl. zone).

[2] Active outputs as indicated on the VAC.

[3] Functionality and zone in which the output is active.



The icons describe the functionality of the outputs in the selected zone:

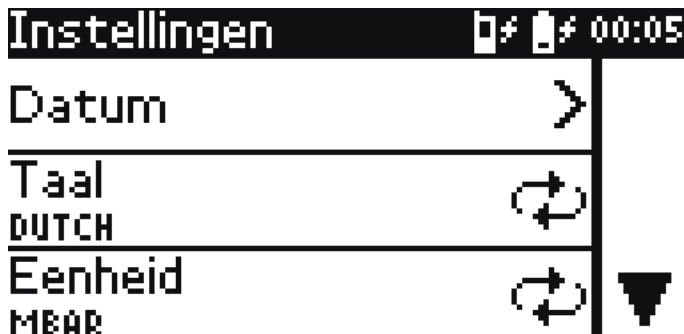
-  Audible output, active during alarm. This output switches off as soon as the alarm is accepted. The “acoustic switchbox” accessory is required for this functionality.
-  Visual output, active during alarm. It remains active for as long as the alarm situation is active and does not stop when the alarm is accepted. The “visual switchbox” is required for this functionality.
-  Output switches on when the under alarm is active. Output switches off when the pressure reaches 90% of the pressure range (alarm low/high value). The “power switchbox” accessory is required for this functionality.
-  Output switched off.

The  symbol indicates the zone for which the output is active. This can be set per zone or is applicable to all zones.









If the VAC works from the battery, the visual/audible alarm will be continuously active for 1 minute during an alarm situation. A 2-second visual/audible alarm sounds every minute after this.

8. Settings

Log in via the main screen to  to alter the general device settings. Select  to view/alter the general settings.



Settings that can be altered:

- Date/time
- Timezone; DST changes automatically
- Language
- Unit (mbar, Pascal, inH2O, mmH2O)
- Access code
- Printer on/off ( = off,  = on)
- Print interval (10s, 30s or 60s)
- Modem settings
 - Modem on/off ( = off,  = on); Use calling /SMS
 - Cloud on / off ( = off,  = on); Connect to VAC Cloud
 - Roaming on / off ( = off,  = on); Allow roaming on SIM-card
 - SMS Service Centre telephone number
 - Network APN; Telephone provider specific setting
 - Username; Telephone provider specific setting
 - Password; Telephone provider specific setting
- Text delay (0s, 60s, 120s, 180s, 240s, 300s, 360s)

Press the setting to change it. Use the scroll bar on the right to go through the various settings.

9. Menu structure

Main menu	Start measuring	Enter location	
		Set-up alarms	
		Live measuring data	Graph
	Support & info		
	USB	Export logs	
		Update firmware	
	Error reports		
	Access screen	Settings	Date
			Timezone
			Language
			Unit
			Access code
			Printer
			Print interval
			Modem settings
			Cloud
			Roaming
			SMS Service Centre
			Network APN
			Username
			Password
			Text message delay
		Outputs	
		Contacts	

10. Placing printer paper and SIM card

10.1 *Replacing the printer paper*

Open the lid of the printer by pushing the handle upwards:



Place the new roll with the beginning facing forwards:



Close the lid and push the handle down:



10.2 Inserting the SIM card

Unscrew the lid of the SIM cardholder:




Push the holder to the left so that it can be moved upwards:



Place the SIM card in the holder and let it drop down again. Sliding the holder to the right fixes the SIM card:



Screw up the lid on the VAC.

Press  after the "No SIM" error report to initialise the SIM card.

10. Placing printer paper and SIM card

Stick the sticker below on the lid of the SIM cardholder according to the instructions below:

- Write the telephone number relating to the SIM card on the sticker.
- Make sure that the surface is clean and grease-free.
- Take hold of the sticker by one corner.
- Remove the protective foil on the back of the sticker.
- Do not touch the adhesive part of the sticker.
- Stick the sticker on the lid or over the existing sticker on the lid.
- Press the sticker down properly.

[PLACE STICKERS]

11. Resolving problems

Printer	
Problem	Solution
Printer feeds paper, but paper remains blank	Check that the paper has been correctly installed as described in chapter 9.1.
Printer does not print	Check that the printer is switched on in the settings (see chapter 7). Check that the adaptor is connected. Check that measuring has been started. Check that there is paper in the printer.
USB	
USB storage device is not detected	Check the file format of the USB storage device. Format the USB storage device in FAT/FAT32 format.
USB export goes wrong	Check the file format of the USB storage device. Format the USB storage device in FAT/FAT32 format. Check that there is enough space on the USB storage device.
Appliance	
Appliance will not switch on	It can take 20 minutes before the appliance switches on again when the battery is completely empty. Connect the adaptor to the appliance.

Warning: Do not try to repair the product. The warranty will lapse in such cases.

You should contact your supplier if the abovementioned solutions do not work.

12. Reparation, service and maintenance

- The VAC should be cleaned with a dry or slightly damp cloth. Do not use aggressive cleaning agents. Never try to remove the lid or clean the inside of the appliance. The guarantee will lapse in such cases.
- For correct service and maintenance it is imperative that the rules and legislation applicable in the country of use are complied with.
- Only persons instructed and trained by Visser B.V. may carry out reparation, service and maintenance.
- The manufacturer guarantees that this product (exclusive battery) works properly when used normally and with the correct maintenance. This warranty applies for a period of 1 (one) year from the date of purchase. The warranty does not apply for damage caused by accidents, faulty maintenance, incorrect operating, misuse or changes to the product. No rights other than those mentioned above may be derived from this warranty, nor in the event of consequential damage or loss. This warranty is extended as an extra service and does not in any way infringe on the consumer rights.

13. Specifications

DESCRIPTION	MIN.	TYP.	MAX.	UNIT
DIMENSIONS	-	360x280x145(lxwxh)	-	mm
WEIGHT	-	3	-	kg
STORAGE TEMPERATURE ²	-10	-	+60	°C
OPERATING TEMPERATURE ^{1,2}	0	-	+50	°C
INGRESS PROTECTION	-	IP67 (closed case)	-	-
PRINTER ROLL WIDTH	-	57	-	mm
PRINTER ROLL DIAMETER	-	39	41	mm
TOUCH SCREEN	-	128x64	-	pixels
BATTERY BACK-UP (@ 20°C)				
PM 1	6	12	30	hours
PM 2	3.5	7.5	30	hours
PM 3	3.5	5.5	30	hours
PM 4	3.5	4	30	hours
INPUT VOLTAGE PM	7.5	9	9.5	V
ADAPTOR INPUT VOLTAGE	100	-	240	VAC
STORAGE INTERNAL	-	1000	-	hours
USB STORAGE	-	USB 2.0, FAT/FAT32	-	-
MEASURING RANGE	-1 (-100)	0 (0)	1 (+100)	mBar (Pa)
MAXIMUM SWITCHING VOLTAGE³	-	-	230	DC/AC
MAXIMUM SWITCHING VOLTAGE³	-	-	2	A
MODEM	-	Quad-band 2G	-	-
SIM TYPE	-	Normal (Mini)	-	-
SPEAKER	-	100	104	dB (at 30cm)

1) Problems could occur when charging the battery at temperatures below 0°C.

2) Non-condensing.

3) Non-inductive load.

We are not liable for any printing errors. Subject to small alterations and technical developments.

14. Declaration of Conformity



Verklaring van Overeenstemming
Declaration of Conformity
Konformitätserklärung

We	Alflex Products BV
Wij	Blauw-roodlaan 300
Wir	2718 SK Zoetermeer

Verklaren onder eigen verantwoording dat de producten;
Declare under our sole responsibility that the products;
erklären in alleiniger Verantwortung, dass die Produkte;

PM 1, PM 2, PM 3, PM 4
model
AT1830 / AT1831 / AT1832 / AT1833

tot welke deze verklaring relateert, voldoen aan de volgende bepalingen
to which this declaration relates are in conformity with the requirements of the following directives
auf die sich diese Erklärung bezieht, konform sind mit den Anforderungen der Richtlinien

2004/108/EG
EC directive on electromagnetic compatibility (EMC)

2011/65/EU
EC directive on the Restriction of Use of certain Hazardous Substances (RoHS)
in electrical and electronic equipment

De conformiteit is gecontroleerd in overeenstemming met de volgende
geharmoniseerde EN- standaards
The conformity was checked in accordance with the following harmonised EN-standards
Die Konformität wurde überprüft anhand der harmonisierten EN-normen

EN-IEC-61000-6-1 2007
Generic Immunity Standard

EN-IEC-61000-6-3 2007
Generic Immunity Standard

Zoetermeer, 4 Juni 2018

Alflex Products
Product Development Manager



H.J. Voordendag



Dehaco B.V

Address of Main Office

Kruisbaak 25, 2165 AJ
Lisserbroek, the Netherlands

T +31 (0) 88 20 20 600

E info@dehaco.nl

www.dehaco.nl