NIDAC

VSMS8-4G

8 Channel Voice and SMS alarm reporting dialler.

**Installation &
User Manual.**

VSMS8-4G - 8 CHANNEL VOICE & SMS DIALLER

MODELS

VSMS8-4G

8 channel voice and SMS dialler in metal case without power supply, use with 12V to 24V DC power supply.

VSMS8-4G-PS

8 channel voice and SMS dialler in poly box with 13.8V DC power supply with battery backup capability (battery not included).

PRODUCT FEATURES

- 8 alarm inputs, each with programmable 90 character SMS text messages and user recordable 15 second voice messages.
- 2 relay outputs.
- Non-volatile memory stores programmed data and voice messages for 10 years without power.
- 99 user programmable contact phone numbers with up to 16 assigned to each input
- Programmable via SMS commands or USB port using VSMS8 software.
- Voice messages recordable via phone call.
- Remote acknowledgment of alarm accepted via SMS or DTMF commands whilst alarm voice message is being received.
- Programmable polarity on all inputs.

SPECIFICATIONS

CONNECTIONS	-	20 screw terminals, 2 x power, 6 x relay outputs & 12 x inputs (including 4 x common connections).
INPUTS	-	8 input channels configurable as N/O or N/C and Slave or Latch mode.
OUTPUTS	-	2 x SPDT relays 1A @ 30V max.
POWER SUPPLY	-	10 to 30V DC @ 300mA max (recommend 12 to 28V DC).
OPERATING TEMP	-	0 to 50°C.
SIM SIZE	-	micro (not supplied).
ANTENNA	-	SMA connector.

COMMUNICATION

4G FREQUENCIES	-	B1, B2, B3, B4, B5, B7 ,B8 & B28 (2100, 1900, 1800, 1700, 850, 2600, 900 & 700MHz).
3G FREQUENCIES	-	850, 900, 1900 & 2100MHz.
2G FREQUENCIES	-	850, 900, 1800 & 1900MHz.
VOICE MESSAGES	-	8 recordable messages of 15 seconds each.
SMS TEXT	-	8 user programmable messages of up to 90 characters each.

MECHANICAL

VSMS8-4G

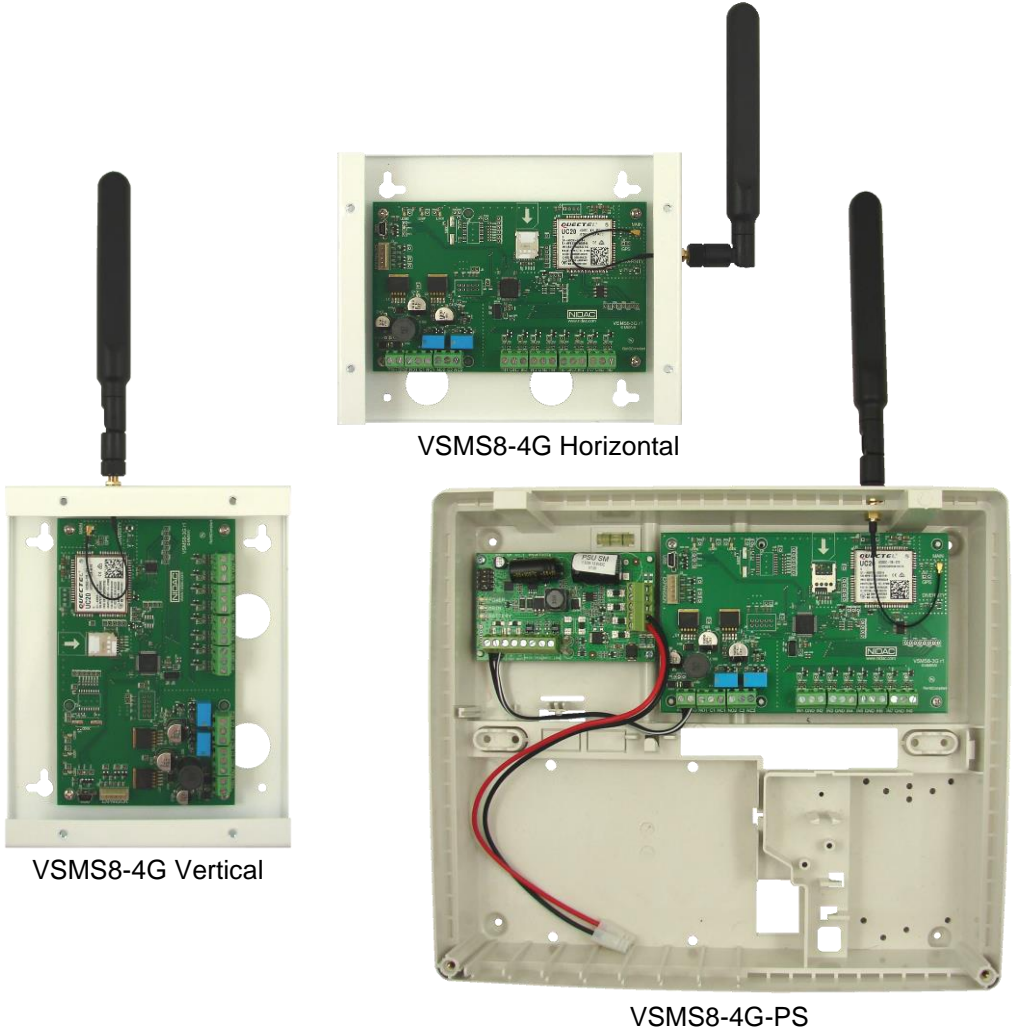|		
DIMENSIONS	-	186 x 152 x 35 - case only.
W x L x H (mm)	-	232 x 233 x 35 - horizontally mounted with antenna.
	-	152 x 360 x 35 - vertically mounted with antenna.
WEIGHT	-	750g

VSMS8-4G-PS

DIMENSIONS	-	296 x 254 x 89 - box only.
W x L x H (mm)	-	296 x 420 x 89 - with antenna.
WEIGHT	-	1650g (950g + 700g plug pack).

INSTALLATION

The VSMS8 should be installed in a cool, dust and moisture free environment.

VSMS8-4G Horizontal

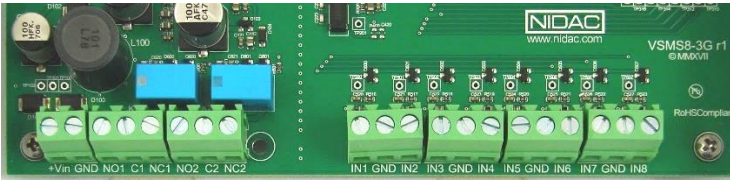VSMS8-4G Vertical

VSMS8-4G-PS

MOUNTING

The VSMS8-4G is designed to be wall mounted either horizontally or vertically as shown above.

The VSMS8-4G-PS is designed to only be wall mounted horizontally so that a backup battery will sit correctly.

If necessary, the antenna can be mounted away from the unit using a Male to Female SMA lead.

CONNECTIONS

+Vin	12 to 24V DC positive input from power supply
GND	Negative input from power supply

NO1	Normally Open contact for Output 1 relay
C1	Common contact for Output 1 relay
NC1	Normally Closed contact for Output 1 relay
NO2	Normally Open contact for Output 2 relay
C2	Common contact for Output 2 relay
NC2	Normally Closed contact for Output 2 relay

IN1	Input 1, connect NO or NC contact between here and GND to trigger.
GND	GND connection for inputs 1 & 2.
IN2	Input 2, connect NO or NC contact between here and GND to trigger.
IN3	Input 3, connect NO or NC contact between here and GND to trigger.
GND	GND connection for inputs 3 & 4.
IN4	Input 4, connect NO or NC contact between here and GND to trigger.
IN5	Input 5, connect NO or NC contact between here and GND to trigger.
GND	GND connection for inputs 5 & 6.
IN6	Input 6, connect NO or NC contact between here and GND to trigger.
IN7	Input 7, connect NO or NC contact between here and GND to trigger.
GND	GND connection for inputs 7 & 8.
IN8	Input 8, connect NO or NC contact between here and GND to trigger.

DIALLER OPERATION

POWER UP

When power is applied to the VSMS8 it will go through a start-up routine to check the operation of the 4G module, the presence of a SIM card, whether the SIM card is unlocked and then whether there is 4G signal present.

IMPORTANT NOTE: Any inputs that are in their alarm state when the unit is powered up will be ignored until the input changes state.

LED INDICATORS

There are 3 LEDs on the board labelled LED1, LED2 & LED3 from left to right (when the dialler is mounted with the terminals at the bottom).

Each LED may show 1 of the states described in the table below in either red, green or orange colour:

LED State	Description
OFF	LED is always Off
FLASH SHORT	Flashing at a rate of once per second with short (0.1s) on time and long (0.9s) off time
FLASH	Flashing at a rate of once per second with ½ second on time and ½ second off time
FAST FLASH	Fast flashing at once per 0.4s with 0.2s on time and 0.2s off time
ON	LED is always On

The meaning of the valid states for each of the LEDs is given below:

LED1

OFF	No power
ORANGE - FLASH	Dialler start up and 4G module initialising
RED - FAST FLASH	4G module error
GREEN - ON	4G module ready

LED2

OFF	Waiting for 4G module to initialise
RED - FLASH SHORT	SIM card not found
ORANGE - FLASH	SIM detected and initialising
GREEN - ON	SIM card

LED3

OFF	Not connected to network
RED - FLASH SHORT	Searching for network or signal strength too low
GREEN - FLASH	SIM card registered on network and signal strength OK
ORANGE - FLASH	Voice call is in progress
RED - FAST FLASH	Network Error

ALARM ACTIVATION

The dialler is activated by triggering one of the inputs (IN1-IN8), this can be by either connecting the input to GND (Normally Open input setting) or removing the connection to GND (Normally Closed input setting) depending upon how the input is setup.

SMS/CALL SEQUENCE

Upon being triggered the dialler will first send the assigned SMS alarm message to any phone numbers assigned as SMS to the input, 30 seconds later it will call the numbers assigned as Voice in the order they were assigned to the input.

If no phone numbers are assigned as SMS for the input then the calls to the Voice numbers will start immediately.

WARNING: If no voice message is recorded for the input then no calls to the Voice numbers will be made.

CANCELLING THE DIALLER CALL SEQUENCE

After receiving the SMS alarm message, the Voice calls can be cancelled by sending an SMS of "CLR‿<input no>" to the VSMS8 where <input no> is the number of the input that initiated the alarm message and can be identified in the received text following the "ALM on " part of the message.

When a Voice call is received the call sequence can be cancelled by pressing 1 on the phone's keypad, this will stop the unit calling any more numbers assigned to the input.

If the command is accepted the VSMS8 will respond with a single long beep. 2 short beeps indicate the command wasn't recognised correctly and no beeps indicates that no tones were received by the VSMS8.

PINs

There are 2 PINs for the unit, an Administrator PIN and a User PIN.

The Administrator PIN can be used to change or request any setting or operate the relay outputs.

The User PIN can be used only to operate the relay outputs or change the User PIN.

PROGRAMMING VIA SMS

Programming strings are not case sensitive (upper or lower case can be used).

Common symbols used in SMS programming command sequences:

- ␣ = separator character, can be one or more of either space (" ") or comma (",").
- <> = parameter that must be included in the programming string
- [ ] = optional parameter that can included in the programming string
- <admin pin> = 4 to 6 digit administrator pin, default value = 9999.
- <user pin> = 4 to 6 digit administrator pin, default value = 0000.
- <pin> = either of the administrator or user.
- <input no> = the number of the input on the VSMS8 from 1 to 8.
- <output no> = the number of the output on the VSMS8 from 1 to 2.
- <phone no> = the phone number **without** any spaces.

Additional symbols used will be explained in the relevant sections.

Returned Information:

When an SMS programming sequence is sent to the VSMS8 it will send back an SMS to indicate whether the command was accepted.

Unless otherwise specified for the individual commands the responses are:

Success!

or

Failed! <failure reason>

where <failure reason> is one of the following

access not allowed	-	The <admin pin> or <user pin> used is incorrect.
invalid format	-	The format of command was incorrect.
missing values	-	A required parameter was missing from the command.
not enough memory	-	Only occurs when adding a contact phone number and indicates that there are already 16 phone numbers allocated to the specified input.
contact not found	-	Only occurs when deleting a contact phone number and indicates that the phone number specified was not assigned to the specified input.

** IMPORTANT NOTE ** Do not power down the dialler until 90 seconds after the last SMS programming command was sent to allow the settings to be permanently saved.

PLEASE NOTE: All examples shown on the following pages use the default admin of 9999 or default user PIN of 0000, if either of these have been changed the new values will need to be used.

CHANGING THE ADMINISTRATOR PIN

Command sequence:

#<admin pin>␣PIN␣2␣<new admin pin>

<new admin pin> = the new 4 to 6 digit Administrator PIN.

Example:

#9999␣PIN␣2␣2018

Changes the Administrator PIN from the default of 9999 to 2018

CHANGING THE USER PIN

Command sequence:

#<pin>␣PIN␣1␣<new user pin>

<new user pin> = the new 4 to 6 digit user PIN.

Example:

#0000␣PIN␣1␣1234

Changes the User PIN from the default of 0000 to 1234

ADDING CONTACT PHONE NUMBERS TO INPUTS

The VSMS8 can hold up to 99 phone numbers and each input can be assigned up to 16 phone numbers.

Command sequence:

#<admin pin>␣ADD␣<input no>␣<phone no>␣[V]␣[S]

[V] = optional parameter to specify this phone number will receive the voice message.

[S] = optional parameter to specify this phone number will receive the SMS message.

Notes:
1. You must specify at least one of [V] or [S], both can be specified.
2. Changing the [V] or [S] parameter when adding the same phone number to another input will modify the [V] and [S] setting for any existing input assigned to this phone number to the new setting specified.

Examples:

#9999␣ADD␣1␣0519991234␣V

Add the phone number 0519991234 to receive voice message alarm calls for input 1.

#9999␣ADD␣2␣0601111234␣S

Add the phone number 0601111234 to receive SMS alarm messages for input 2.

#9999␣ADD␣2␣0601117880␣V␣S

Add the phone number 0601117890 to receive both SMS and voice call alarm messages for input 2.

DELETING CONTACT PHONE NUMBERS FROM INPUTS

Command sequence:

  #<admin pin>␣DEL␣<input no>␣<phone no>

To delete a phone number from all inputs set <input no> to 0.

To delete all phone numbers from a single input set <phone no> to ALL.

To delete all phone numbers from all inputs set <input no> to 0 **and**
<phone no> to ALL.

Examples:

  #9999␣DEL␣1␣0519991234

  Deletes the phone number 0519991234 from receiving alarms for input 1.

  #9999␣DEL␣0␣0519991234

  Deletes the phone number 0519991234 from receiving alarms for ALL inputs.

  #9999␣DEL␣2␣ALL

  Deletes the all phone numbers from receiving alarms for input 2.

  #9999␣DEL␣0␣ALL

  Deletes all phone numbers from the unit so that no alarms voice calls will be made
  or SMS messages sent for any inputs.

SETTING SMS ALARM MESSAGES

Command sequence:

  #<admin pin>␣NAME␣<input no>␣"<alarm message>"

    <alarm message> = Up to 90 characters for the message, this must be
                      surrounded by double quote characters and therefore
                      cannot include a double quote within the message. This
                      message will follow the text *ALM on <input no>:* that is
                      sent to indicate which input number was triggered.

Returned Information:

On success the response will be:

    <input no>: <alarm message> - The alarm message for the input was successfully
                                    modified.

Example:

  #9999␣NAME␣1␣"High Temperature on Fridge"

  Sets the SMS alarm message for input 1 to be *High Temperature on Fridge*, so the
  full SMS message received would be *ALM on 1: High Temperature on Fridge*.

CONFIGURING THE INPUTS

Command sequence:

#<admin pin>␣MOD␣INP␣<input no>␣<sense>␣<type>␣<max retries>

<sense>	= **NO** for Normally Open or **NC** for Normally Closed.
	For inputs configured as **NO** the alarm will be triggered when the input is connected to GND.
	For inputs configured as **NC** the alarm will be triggered when the input is disconnected from GND.
<type>	= **L** for Latch or **S** for Slave.
	Latch inputs will continue the alarm call sequence even if the input trigger is removed.
	Slave inputs will stop the alarm call sequence when the input trigger is removed. A very short trigger may result in no SMS messages being sent or any voice calls made.
<max retries>	= 0 to 99, the maximum number of times the VSMS8 will try to call out for voice messages.
	Setting this value to less than the total phone numbers assigned to the specified input will mean that some of the phone numbers will not be called.
	A setting of 0 will disable voice message calls for the specified input.

Returned Information:

On success the response will be:

<input no>: <input settings>

where <input settings> is the current settings for the input along with any phone numbers assigned to it.

Examples:

#9999␣MOD␣INP␣1␣NC␣S␣6

Sets input 1 to be:-
Normally Closed (triggers when connection between IN1 & GND is broken),
Slave mode (continues to report alarm only whilst still triggered) and
will make a maximum of 6 voice alarm calls.

#9999␣MOD␣INP␣2␣NO␣L␣2

Sets input 2 to be:-
Normally Open (triggers when connection between IN1 & GND is made),
Latch mode (continues to report alarm even if the trigger condition is removed) and
will make a maximum of 2 voice alarm calls.

REQUESTING SETTINGS AND STATUS VIA SMS

IMPORTANT NOTE: The maximum number of characters that the VSMS8 can send back is limited to 300 so any requested information will be truncated if it is longer than this. Also note that any information over 160 characters will result in 2 SMS messages being sent.

Common symbols used in SMS request command sequences:

[start] = optional parameter to specify the first contact, input or output to list

If this parameter is not specified, then the listing will start from 1.

[end] = optional parameter to specify the last contact, input or output to list

If this parameter is not specified but the [start] parameter was, the listing will be only for the [start] contact, input or output number.

If both [start] and [end] are not specified then all the contacts, inputs or outputs will be returned.

If only one parameter is specified, then it will always be assumed to be [start].

For additional common symbols used in the SMS request commands please refer to the "PROGRAMMING VIA SMS" section.

LISTING PROGRAMMED CONTACT PHONE NUMBERS

All phone numbers for the contacts are stored in a memory location assigned by the VSMS8. Each time a new contact is added it will be stored in the lowest numbered free location. These locations are numbered from 1 to 99.

Command sequence:

#<admin pin>␣LST␣CON␣[start]␣[end]

Returned Information:

Failed! contact not found -   There were no contact phone numbers found between [start] and [end]

On success the response will be:

Listing of contacts with their location number, phone number and whether they are set to receive SMS and/or Voice calls

LISTING INPUT SETTINGS AND ASSIGNED PHONE NUMBERS

Command sequence:

#<admin pin>␣LST␣INP␣[start]␣[end]

Returned Information:

On success the response will be:

Listing of the requested inputs with their configuration settings and the phone numbers assigned to it.

REQUESTING INPUT STATUS

Command sequence:

#<admin pin>␣STS␣INP␣[start]␣[end]

Returned Information:

On success the response will be:

Listing of the requested inputs with their configuration settings and the phone numbers assigned to it.

REQUESTING OUTPUT STATUS

Command sequence:

#<admin pin>␣STS␣OUT␣[start]␣[end]

Returned Information:

On success the response will be:

Listing of the requested outputs and whether it is on or off.

VOICE MESSAGES

Voice messages can be recorded and played back by calling the VSMS8 from a mobile or landline phone and using the keypad to enter the command sequences below.

The VSMS8 gives 2 short beeps if there is an error in the received command sequence and 1 beep if the command has been accepted.

To record a message

1. #<admin pin>*4*<input no>#
2. Wait for a single beep then start speaking.
3. Press 4 to end the recording or wait for the full 15 seconds of recording time.

To playback a message

#<admin pin>*3*<input no>#

NOTE: Once the Administrator PIN has been successfully used for the first time, future commands during the same phone call do not need to include "#<admin pin>*".

Example:

#9999*3*1# - play back voice message for input 1 and enter the admin code

*3*2#   - play back voice message for input 2 without requiring the admin code

RELAY OUTPUT ACTIVATION

NOTE: On power up both output relays will be in the OFF state no matter which state they were in when the dialler was powered down.

CONTROLLING OUTPUT RELAYS VIA SMS

Command sequence:

    #<pin>␣OUT␣<output no>␣<on/off>

        <on/off > = either ON or OFF.

Returned Information:

CONTROLLING OUTPUT RELAYS VIA PHONE CALL

An alternative method to using the SMS commands to operate an output is to call the VSMS8 from a mobile or landline phone and using the following keypad command sequence below.

Set an output

    #<pin>*2*<output no>*<on/off>#

        <on/off> = 1 for ON or 0 for OFF

The VSMS8 gives 2 short beeps if there is an error in the received command sequence and 1 beep if the command has been accepted.

PROGRAMMING VIA USB WITH PC SOFTWARE FOR WINDOWS™

The latest version of the VSMS8 PC software is available from www.nidac.com in the Downloads->Dialler section.

The PC software allows all the settings to be programmed from the convenience of a single application. The settings can be saved to a file so that multiple units can be programmed with the same configuration without having to re-enter all the settings.

Please note that no settings are updated in the connected VSMS8 until they are sent to the unit using the appropriate buttons.
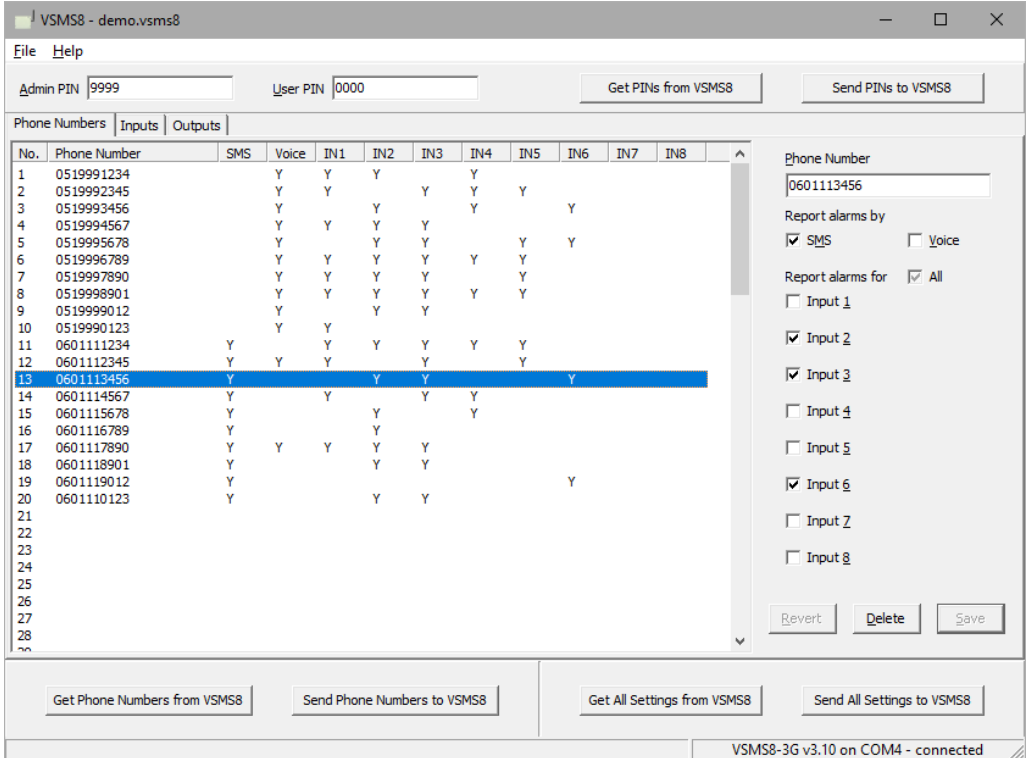
The Administrator and User PINs can be changed by editing the values displayed for each.

Phone numbers can be added by selecting an empty line then using the right hand panel to enter the new phone number, select whether to communicate alarms via SMS and/or Voice message and which inputs to receive alarms for.

Existing phone numbers can be edited or deleted by selecting them in the list.

The options for each input are described below:

Normally Open   - the input will be triggered when it is connected to GND.
Normally Closed - the input will be triggered when it is disconnected from GND.

Latching - the call sequence will continue even if the trigger is removed.
**Slave**   - the call sequence will stop when the input trigger is removed. A very short
                    trigger may result in no SMS messages being sent or any voice calls made.

Total dialling attempts - the maximum number of times the VSMS8 will try to call
                                        out for voice messages.
   Setting this value to less than the total phone numbers
                                        assigned to the specified input will mean that some of the
                                        phone numbers will not be called.
                                        A setting of 0 will disable all voice message calls for the
                                        specified input.

SMS Message - The text message that will follow "ALM on <input no>:"
                            where <input no> is the number of the input that was triggered.
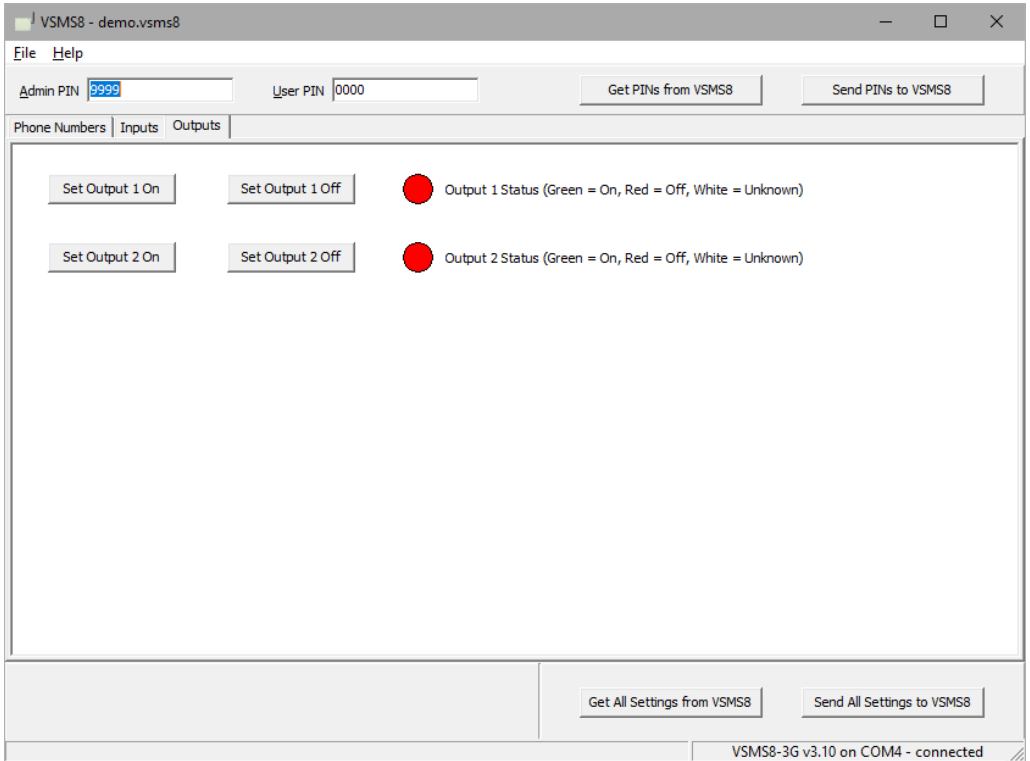
There are no settings for the outputs but the status of each output is displayed here and they can be turned on or off.
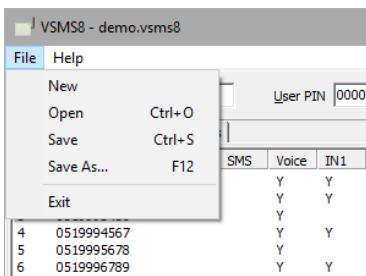
The options available from the File menu are:

New - Clear all phone numbers and reset the PINs and input settings to defaults.

Open - Open a previously saved settings file.

Save - Save the current settings to the file that is open in the software.

Save As - Save the current settings to a new file.

Exit - Close the VSMS8 software.

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