adésys
IN CONTROL

Manual SVA

Please consider the environment before printing

Version 03-2025

MEASURE - ALERT - CONNECT

Index

1. Introduction

This manual covers the SVA module equipped with firmware version 1.0 and higher. The SVA is an alarm dialler and can be used to monitor processes and report alarms via SMS and Email.

1.1. Variants

The SVA is available in two variants:
- the SVA with digital inputs;
- the SVA with digital inputs and a relay output.

1.2. Features of the SVA-series

- Checkmyproces.com.
- Configurable delay times.
- Reporting of power failure without acceptance time delay.
- Periodic restart (reset) of the SVA (can be switched on and off).
- Ethernet interface UTP connection.
- Settings and SMS texts are permanently stored in the internal flash memory of the SVA.

We recommend that you read the user manual carefully so that you can make optimal use of all SVA options.

1.3. Safety criteria

Before using the SVA, there are several criteria that the user should meet.
- The SVA should be installed in a controlled environment (for reasons of fire prevention).
- The SVA should be supplied with power using a SELV-type power supply.
- External Ethernet should not be connected directly to an SVA, but should be connected via an overvoltage protection device.
- To reduce the probability of damage to the equipment, the SVA should be placed in an environment protected against electrostatic discharge (ESD).
- The SVA is intended for use as a modem or alarm dialler. The SVA is not intended for use as part of a critical safety system in a critical process.

1.4. Checking the delivery

Check the packaging for damage. Contact your supplier immediately if the delivery is found to be damaged or incomplete upon receipt.

The standard delivery includes:
- SVA module;
- Connection terminals;
- Ethernet cable;
- Quickstart SV-line.

Optional items include:
- Antenna and antenna cable (various models, including vandalism-proof antennas);
- Mains adapter 230VAC/12VDC (item number SV-20).

1.5. Environment

This product contains materials that can harm the environment. For the sake of the environment, if the product has to be replaced at the end of its service life please do not dispose of it through the household waste. Please return the device to your supplier or hand it over to a designated depot.

1.6. Warranty and repair

Adésys performs a series of extensive tests on each SVA before dispatch. Adésys uses a warranty period of **1 year**.

Warranty claims are invalidated if:
- The defect is caused by gross negligence or inexpert installation;
- The device has been opened and/or repairs or modifications have been performed without the permission of Adésys;
- It is found that the serial number has been removed or damaged;

Please get in touch with Adésys customer service if you have any questions regarding the warranty or repairs.

1.7. Liability

Adésys accepts no liability for consequential loss in the event of the stagnation of the alarm. An alarm dialler does not provide a 100% guarantee against damage, it is merely a tool to prevent damage. You should therefore discuss the remaining risk with your insurer.
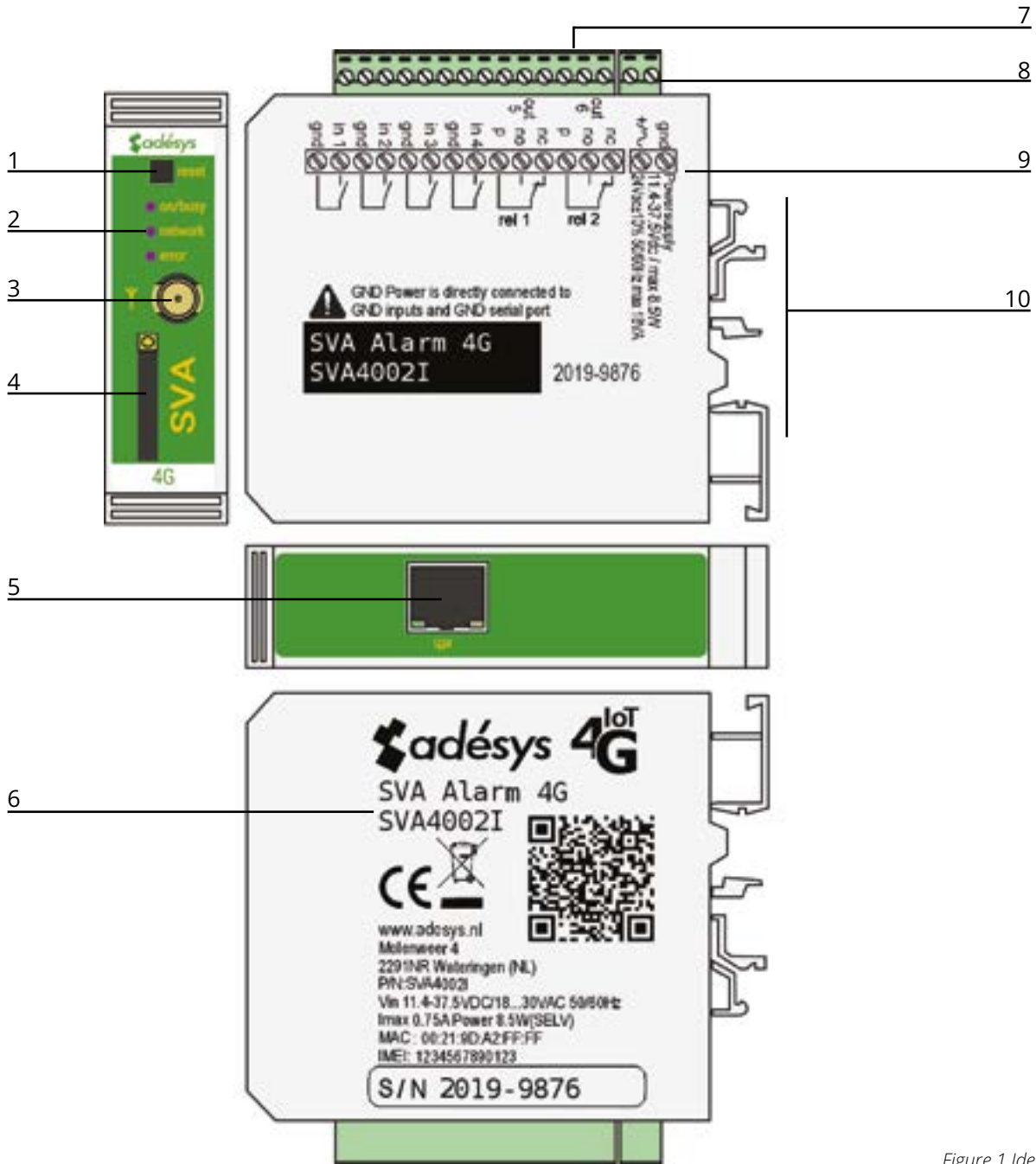
1.8. Identification

Figure 1 Identification SVA

1	Reset button
2	LED status indicator: general status (on/busy), antenna level (network), error messages (error)
3	Antenna connection type SMA female
4	SIM card holder
5	Ethernet connection
6	Information sticker
7	Input/output connection terminals
8	Supply voltage connection terminals
9	Connection sticker
10	DIN rail mounting clamp

2.   Connection

To connect the SVA correctly, we recommend using exclusively Camden CTB922HE/# type connectors. Measurements may be affected if other connectors are used.

2.1.   Positioning

Position the SVA where it is not affected by direct sunlight or other heat sources. Choose the place of installation such that moisture cannot penetrate the device. The SVA can be mounted onto the TS35 rail without screws. The permitted ambient temperature range for the electronics is -20°C to +50°C.

The transmission power of the SVA's internal GSM/4G module is higher than that of a standard mobile phone. Under certain conditions this may affect the functioning of surrounding electronic equipment. The effects depend upon the distance between the antenna and surrounding equipment.

2.2.   Affixing and removal: DIN rail

The SVA should be affixed to a DIN rail before connection.
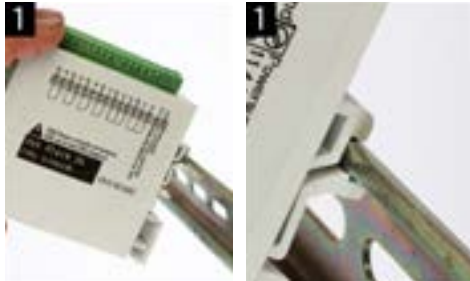
- Put the SVA onto the DIN rail at an angle [1]. It is important that the SVA's DIN rail clip is positioned on the top of the DIN rail.
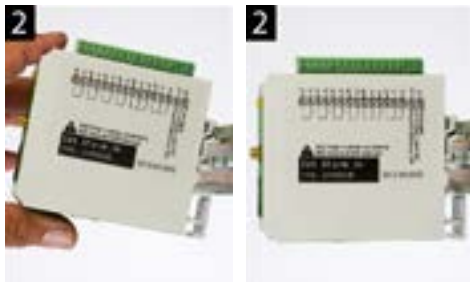
- Tilt the SVA to clip it into place [2]. Then check whether it is securely seated.

The SVA is removed from a DIN rail as follows.

- Place a screwdriver on the underside of the DIN rail clip [3]. Use this as a lever; after approx. 3 mm the SVA can be tilted to release it from the DIN rail.

2.3. SIM card

The size of the SIM card is the mini SIM card size. If the SIM card has a PIN code, this should be entered in the setup tool SV-prog. The required SIM card is installed as follows:
- Switch the SVA off by disconnecting the supply voltage, then press and hold the reset key for 8 seconds to switch off the dialler;
- The SIM card holder is made accessible by pressing the button next to it using a sharp object. The holder is then pushed outwards;
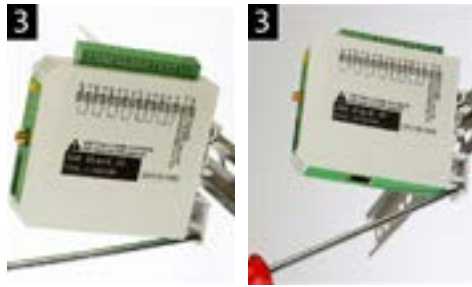- Place the SIM card in the holder and slide this back into the SVA;
- Reconnect the supply voltage to switch the SVA on.

The SVA should be completely switched off before the SIM card is installed. Fitting or removing the SIM card with the SVA switched on may damage the SIM card.

The use of a 'Prepaid' SIM card for dialling purposes is strongly discouraged. The mobile network cannot automatically request the call credit, which means that this can be run down without anyone noticing, resulting in outgoing notifications coming to a standstill.

2.4. Antenna

Connect the antenna cable to the SVA's antenna connection. The antenna plus associated cable can be obtained from Adésys. The antenna should be affixed to as high a point as possible to obtain the best possible range.

After installation, always check the field strength of the antenna signal (max. is 5 flashes of the yellow 'network' LED). Notification of changes in signal strength will always take place after a long delay (± 30 seconds). Take this into account if, for example, the antenna is moved.

2.5. Power supply
2.5.1. SV-20 mains adapter and SV-19 DIN rail power supply

To power the SVA, a 230VAC / 24VDC mains adapter with article number SV-20 or a 100-240VAC / 24VDC DIN rail mounting power supply with article SV-19 can be ordered as an option via the webshop.

When fitting the terminal block to the power supply cable, ensure that the polarity plus (+) and minus (-) is correct.

An extra power supply fuse is not necessary here.

If the SVA is not supplied with power using the above-mentioned mains adapter or DIN rail power supply, the connection regulations in the section below apply.

2.5.2. Power supply

Connect the SVA to a DC power supply of 15 to 35VDC (at least 8.5 W) or a transformer of 20 to 30VAC. The power supply input of the SVA is not galvanically isolated from the other connections. The GND connection of the power supply connector is directly connected internally to the GND connection of the input connector and the COM port.

If the SVA is connected to an application (process controller, PLC, computer, active sensor, etc.) without galvanic isolation and the SVA is connected to the same power supply, there is a real chance of earth loops and/or short circuits in this power supply.

2.6. Reset key

The reset key has four functions: first of all, it is used to interrupt the alarm. Pressing this briefly ends the current notification; the SMS messages that have not yet been sent are not sent.

A second function of the reset key is to restart the dialler. The dialler can be restarted by holding this key down for a period of 8 seconds. This only occurs if a power supply is connected.

If no power supply is connected, the reset key functions as an off button. Holding the key down for a period of 8 seconds switches off the dialler.

Statuses of inputs will **not** be stored in a permanent memory. If the supply voltage fails, and the built-in supercap is entirely discharged, the contents of this memory is lost. If the SVA is restarted manually, this status will also be reset. When the supply voltage is restored, the SVA behaves as if it is being started up for the first time. This means that:
- After the supply voltage has been restored, only active inputs are reported once again;
- No recovery message will be sent if the status of the input has been recovered during this power failure.

The fourth functionality is for when there is something wrong and there seem to be no connection. By pushing the reset key for a duration of 3 seconds, releasing it 3 seconds and doing this 3 times the DHCP will be enabled. By enabling the DHCP it is possible to make changes with SV-prog.

2.7. Ethernet

The Ethernet connection can be used for an external connection. This is set up in the SVA: see chapter "3. SV-prog". By default this is set up to connect to Checkmyproces.com.

2.8. 2G/4G connection

To use the SVA with a 2G/4G connection, a SIM card with Internet subscription should be installed in the SVA. It is important that the correct APN, APN user and APN password are entered, otherwise the SVA will not be able to connect. This can be entered in SV-prog in the 2G/4G window.

Network locking is possible. By entering a 2 or 4 in the GSM menu at the provider lock, it is possible to lock the detector to 2G or 4G.

The SVA does not provide a notification if something goes wrong with the APN. For more information about the APN, please contact your provider.

2.9. Inputs and outputs

It is possible to connect several variants of inputs and outputs to the SVA, such as contact inputs , voltage inputs DC or a relay output. When connecting different inputs it is important to look carefully at the wiring diagram. This can be found on the side of the SVA.

3. SV-prog
3.1. Installation

Setting up the SVA can be done in two ways, the fully adjustable way of the SV-prog tool and a limited adjustable way via Remote Setup. For Remote Setup, section "3.5.1. Checkmyproces.com" can be consulted.

SV-prog is used to set up the SV series. This program can be downloaded free of charge from the Adésys website (www.adesys.nl/en/service/downloads). All settings will be stored in the internal flash memory. It is **not** possible to store the settings on the SIM card!

SV-prog must be installed on your PC before it can be used. Follow the instructions displayed on your screen during the installation process. As soon as the installation process is complete, start the program via the shortcut or via the program menu in MS Windows.

Connect the SVA to a power source and connect the SVA to the PC using the Ethernet cable set supplied. The SVA can be connected to the local network or directly to the PC.

As soon as the SVA has been switched on, the tool will display this in the overview after a few seconds and the SVA can be configured by clicking it. When search diallers is pressed, SV-prog shows all accessible diallers.

When SV-prog is not showing any diallers or when the error message 'No ethernet cable' is shown. There is a possibility the wrong network adapter is chosen. By opening SV-prog and opening the configuration

on the top left side it is possible to adjust the network adapter.

Terms used
The terms you will encounter in SV-prog are explained below.

3.2. Status screen
The status screen provides you with information on the SVA. Examples of this information are the IMEI code, the serial number, the MAC address and the current status of the inputs and alarms/errors.

3.3. Call list
A call list is a group of contacts (SMS or Email) that can be coupled to the input to send an alarm message or alarm recovery message. One to eight contacts can be programmed into a call list

3.4. I/O
Inputs are displayed in this window. All inputs can be set up separately from one another. Settings can also be established here for **Mains Power Failure** and **System Errors**.

One call list can be set up for each input. As soon as an input becomes active, the notification procedure starts. The associated alarm message is sent to all set telephone numbers one after the other. This is explained further in the Notification Procedure section.

3.4.1. Input delay
A delay can be set for the status notification (active and idle message) in input delay. This means the status notification will not be sent until the input has been activated or deactivated for longer than this period. The maximum that can be set is '3600' seconds.

! If an input goes back into idle mode during the delay time, the notification procedure does not start.

3.4.2. Recovery report (idle)
If desired, a recovery report SMS can be sent after the input goes into idle mode. The default setting is off even if nothing has been selected. Select 'Yes' to activate this notification. A recovery report will always be sent to the external server.

3.4.3. System errors
Various system errors can be detected by the SVA. Notifications can be set up individually for each error. Depending upon the error, this is displayed in the programming tool and a notification is sent via SMS. By default the notification of all system errors via SMS is switched off.

3.5. Connections
The term 'connections' is used to mean the connection to an external server. With the SVA it is possible to make a connection to Checkmyproces.com or to a dedicated server.

3.5.1. Checkmyproces.com
Checkmyproces is a server on which the status is displayed via the cloud. After logging in, diallers can be connected to the account. This connection takes place via the IMEI number. The IMEI number can be obtained via SV-prog in the status screen and by looking on the side of de dialler.

Remote configuration
It is possible to remotely make changes to the settings of the dialler. This is possible by ethernet and by 4G/GPRS. For using remote configuration it is necessary to have a constant connection. When using 4G/GPRS keep in mind of the extra cost.

! If the network is secured by use of a firewall. Please make the following exceptions.

Data connection
URL : http://svx.meetcentrale.nl:80/severa
Protocol : http
Port : 80

System Settings
URL : mqtt.meetcentrale.nl
Protocol : mqtt
Port : 1883

3.5.2. Own server

It is also possible to enter your own server IP instead of Checkmyproces.com. The status is then sent to this IP address. The connection to your own server is made via two paths. The message is sent via HTTP POST and the settings via MQTT. For more information please contact Adésys.

3.6. System

In the system section you can change the general SVA settings, enter GSM and mobile data settings or trigger a factory reset.

3.6.1. Device

In this window you can change device-specific settings such as device name, alarm active text, alarm recovery text, automatic updates, periodic reset and a periodic report.

3.6.2. Ethernet

Ethernet can be set up with a DHCP server or with the IP, DNS and gateway entered by the user. When an error occurs it is possible to reset the DHCP by pushing the reset key for a duration of 3 seconds, releasing it 3 seconds and doing this 3 times. After which the leds wil show restart sequence.

3.6.3. GSM and mobile data

Here, the GSM module can be switched off, the PIN code entered, 2G/4G mobile data switched off and locked. You here also will find APN set up. Please contact your provider for the APN settings.

3.6.4. Factory reset

By performing a factory reset all settings will be lost and a reset to the default settings will be prompted.

4. Notification procedure

The notification procedure starts in the event of a status change or error. If set up, the SVA will first establish a data connection and send data, and then send the associated notification message to the first contact on the call list that has been set up. After the notification message has been sent, the SVA waits for an acceptance SMS. This is called the acceptance period. During this period, the user is required to send an SMS back to the SVA to ensure that the notification procedure is ended. If this does not occur, the next contact from the call list will receive an SMS.
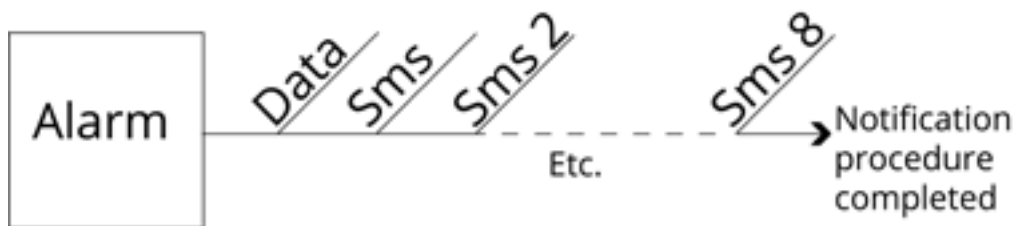

Figure 2 Notification procedure

4.1. Notification message

An SMS alarm message is structures as follows: **device name | input name | status**.
- **Device name**: contains a text chosen by the user. This can be set up in the system menu.
- **Input name**: contains a text chosen by the user, which is coupled to the input channel. This can be set up in the I/O menu for the relevant input.

System errors such as the Ethernet error and the 'no numbers coupled' error have a fixed text (in English) that cannot be changed. For example, Ethernet failure uses **Ethernetfault**.

- **Status**: shows whether an input channel is Active or Idle. Active and recovery texts can be set up in the system menu.

Email
This is used if an Email address is entered in the call list. In the event of a notification, the dialler first sends a message to Checkmyproces via httpost, whereupon Checkmyproces converts the notification into an Email message and sends this to the Email address that has been entered. The structure of the message is the same as the SMS.

4.2. Notification of status changes

After input channel 1 has been activated, the following can be observed:
- The green LED (**on/busy**) flashes 1x to indicate that input channel 1 is active;
- After a few seconds, the green LED (**on/busy**) flashes faster to indicate that the SMS message is being sent;
- The green LED (**on/busy**) again flashes 1x. The SMS message has been sent;

- The notification message appears on the mobile phone to which the SMS message has been sent; this message can be structured as follows: **LOCATION PUMP FAULT Active**;
- The green LED (**on/busy**) continues to show the status of the input until this ceases to be active;
- If the input returns to idle mode and a recovery report has been set up, the notification message will be structured as follows: **LOCATION PUMP FAULT Idle**.

4.3. Acceptance SMS

After receiving the alarm message, an acceptance SMS should be sent back. The content of this message does not matter as the SVA uses number recognition to accept the SMS.

4.4. Notification of mains power failure

The SVA is equipped with a supercap. This gives the dialler the option of sending a few messages in the event of a power failure. The associated notification message is sent to the first number in the call list linked to the mains power failure. Any set acceptance time is ignored. This means that sufficient power is present in the powercaps to execute the reports.

After the power fails, the following can be observed:
- The red LED (**error**) flashes 5x to indicate that the supply voltage has been lost;
- After a few seconds, the green LED (**on/busy**) flashes faster to indicate that the SMS message is being sent;
- The green LED (**on/busy**) remains on. The SMS message has been sent;
- The notification appears on the mobile phone to which the SMS message has been sent; this message can be structured as follows: **LOCATION powerfailure Active**;
- The red LED (error) continues to show the status of the mains power failure until this has been recovered.

! A mains power failure message always takes priority over an ongoing notification of a status change. After notification of the mains power failure, any interrupted notification can be restarted. Notification of status changes that have not yet been notified then continues. This priority arrangement applies for both **Active** and **Idle**.

5. Output switching by SMS

With the SVA, the output channel can be switched by means of an SMS message. The SMS message should be structured as follows: **#<Command><parameter1><parameter2>#**
- **Command** = O (Output).
- **Parameter1** = A (Active) or I (Idle) or P (switch Pulse, default: 2 seconds active).
- **Parameter2** = I/O number.

! The output number is not the same as the relay number. Relay number 1 is output 5.
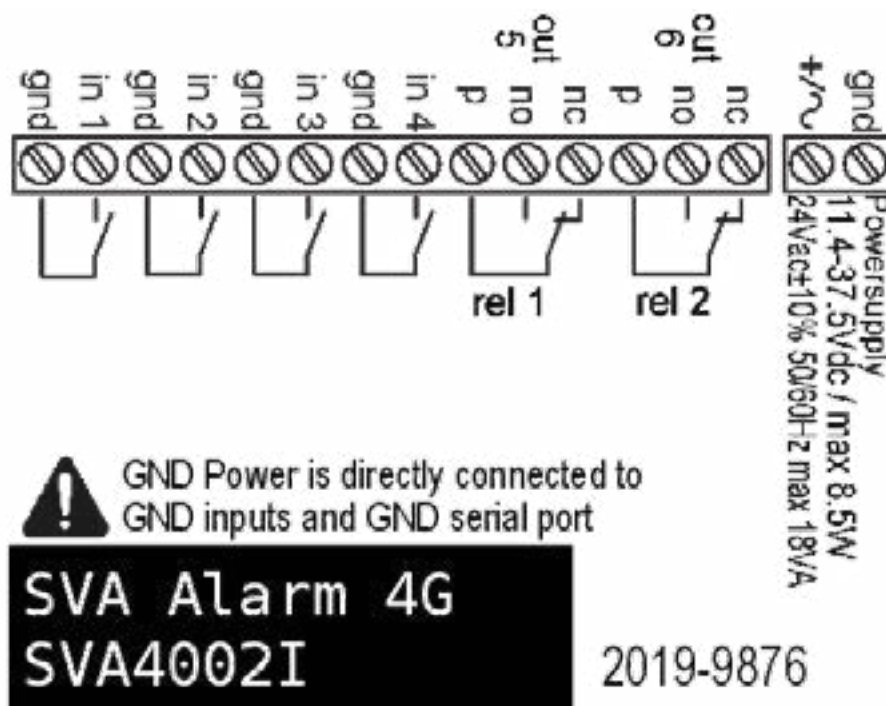

Figure 3 Connectsticker

Example SMS message to relay 1:
- Output 5 active: #OA5#
- Output 5 Idle: #OI5#
- Output 5 with default Pulse: #OP5#
- Output 5 with 8s Pulse: #OP58#
- Output 5 with 20s Pulse: #OP520#

6. Import and export of settings

It is possible to export via SV-prog settings:
- for importing to the same type of detector;
- as a backup when settings are changed.

When importing to another detector it is important that it meets the following criteria:
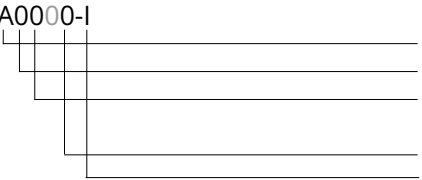- the detector is of the same type: SVA2000I to SVA2000I
- the settings are of the same version:
  - 1.3.7 and lower contains version 2
  - 1.4.1 and higher contains version 3
  - 1.5.0 and higher contains version 4
  - 1.6.0 and higher contains version 5

## 7. Appendices
7.1. Led status indication

Number of flashes for error (red)	
1x	Problem with GSM module
2x	No SIM card detected
3x	Incorrect pin code
4x	PUK code necessary
5x	Power failure
6x	No SMS central number / no antenna level
7x	No telephone number coupled to input / 2G/4G connection cannot be established / Ethernet error
8x	Connection to external server cannot be established
Number of flashes for network (orange)	
Off	No antenna
Constant	Connected to external server
1x	Antenna level 1% < > 20%
2x	Antenna level 21% < > 40%
3x	Antenna level 41% < > 60%
4x	Antenna level 61% < > 80%
5x	Antenna level 81% < > 100%
Faster	Establishing connection (clientmode)
Number of flashes for on/busy (green)	
Off	SVA is switched off
On	SVA is switched on
Faster	Starting up / sending message
1x	Input 1 active
2x	Input 2 active
3x	Input 3 active
4x	Input 4 active
5x	Input 5 active
6x	Input 6 active
7x	Input 7 active
8x	Input 8 active

## 7.2. Technical specifications

System properties		

SVA0000-I

Type of detector: **a**larm dialler | (Web**l**ogger|**m**odem)
Number of digital inputs
Number of GPIO inputs (analogue)

Number of relay outputs
I=4G variant

Input/output options (differs for each SVA model)		No.
Digital contact input (NO/NC)		4 - 8
Digital voltage input (5 - 24VDC)		4 - 8
Relay outputs		0 - 2
Hardware	**4201 4G**	**4211 4G**
Type I/O	SVA4002-I	SVA2000-I SVA8000-I
Digital contact input max. contactresistance max. $Vinl_{ow}$	0 - 8 1kΩ 1V	0 - 8 1kΩ 0.4V
Digital voltage input (5 - 24VDC) Abs. Vmax level $Vnom_{max}$ $Vmin_{hoog}$ $Vmax_{laag}$	4 - 8 30V 24V 2.0V 1.5V	4 - 8 30V 24V 2.5V 2.0V

Inputs are protected against 24VAC. However, they are not suitable for measuring / detecting AC signals in Voltage / Contact or Digital Input mode.

Hardware	**4201 4G**	**4211 4G**
Relay output Relay modes (P/NO/NC) Imax per output Switchable voltage level Life expectancy	0 - 2 1A SELV 30VDC/1A (resistive) 1×10^5 operations at 20°C, 1 Hz	-
Ethernet	Type	10Base-T/ 100Base-TX
	Auto MDIX	Yes
Mobile network	GSM/GPRS/EDGE/ LTE Cat-M1	Global-Band FDD-LTE B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26/B28/B39 (B39 CAT-M1 only) GSM/GPRS/EDGE 850/900/1800/1900 MHz (Quadband)
	Antenna connection	Connector type SMA female
Power supply	Nominal	1-2 Watt (2W whilst the supercap is charging)
	Peak	8.5 Watt / 18 VA (AC)
	Imax	0.75A @ Vin= 11.4V
	Power supply range	15 … 35VDC (SELV) 20 … 30VAC (SELV)
	Built-in emergency power supply	Supercap (loaded after a few minutes) so that a power failure can still be reported
Expected service life (Calculated MTBF)	88167 hours (=10 years), according to componentcounting method	

Enclosure and operating conditions	
Enclosure	DIN rail (TS35) mounting; enclosure fire retardant UL94-V0
Dimmensions (W x H x D)	23 x 95 x 102 (mm)
Weight	125gr
Operating temperature	-20°C … +50°C
Air humidity	20% - 85% (not condensed)

| IP code	IP10
Maximum height	Up to 2000 metres (above 2000 metres the maximum operating temperature is reduced by 1.5°C per 300 metres up to a maximum heigth of 4000 metres)
Regulations	
EMC	Emission: EN 301 489-01 V1.9.2 & EN 301 489-03 V1.4.1 (Class B) Immunity: EN 301 489-01 V1.9.2 & EN 301 489-03 V1.4.1(Class A)
Safety (CE)	EN 60950-1 (2006) + A11 (2009) + A1 (2010) + A12 (2011) + AC(2011) + A2 (2013)
Alert functions	
Number of dialing numbers	3 call lists, each containing 8 dialing numbers per call list, maximum of 20 digits per dialing number
Notifications	SMS message or text message over IP IP network

7.3. Wiring diagrams
SVA2000I
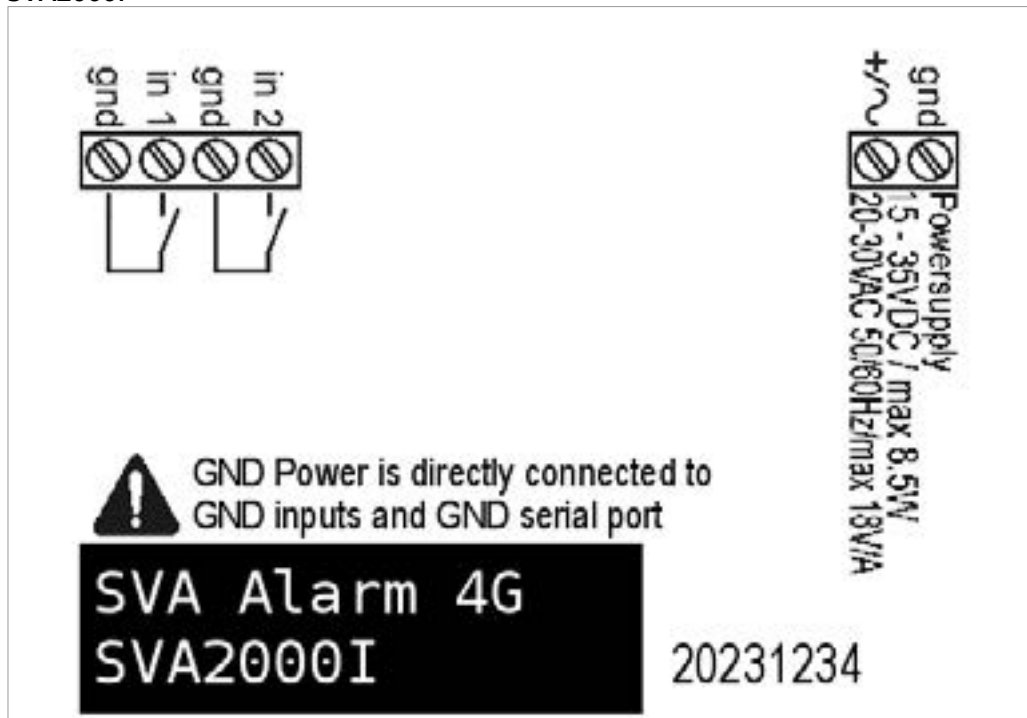
SVA4002I
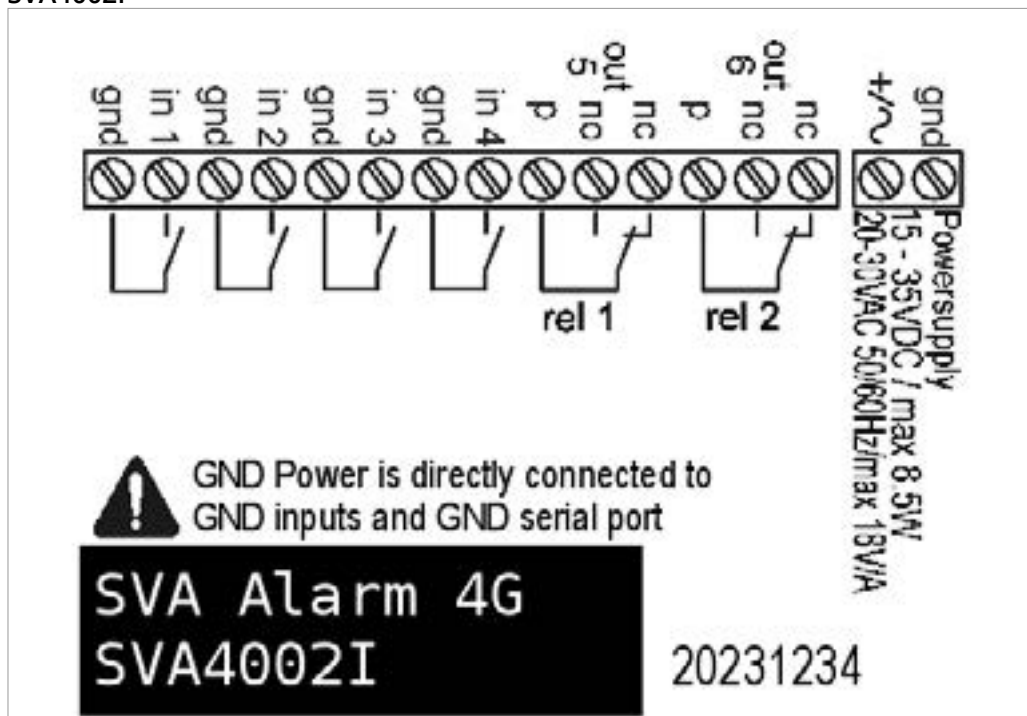
SVA8000I
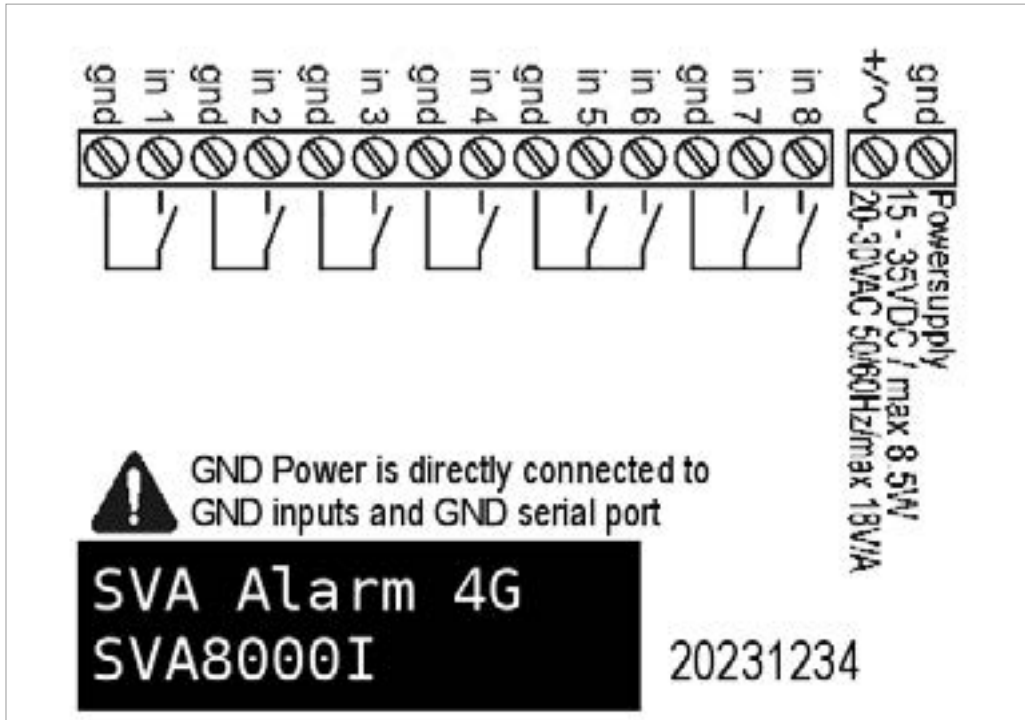
Also available in this SV-product line:

SVL Weblogger

Industrial 4G Weblogger for sending alerts in relation to limit values being exceeded.

SVM 4G modem

Industrial 4G modem/sms alarm dialler for connection to applications in the field.

Checkmyprocess.com

Convenient display of current measured values from your process.

Visit the SVA product page on the website

Please consider the environment before printing

Version 03-2025