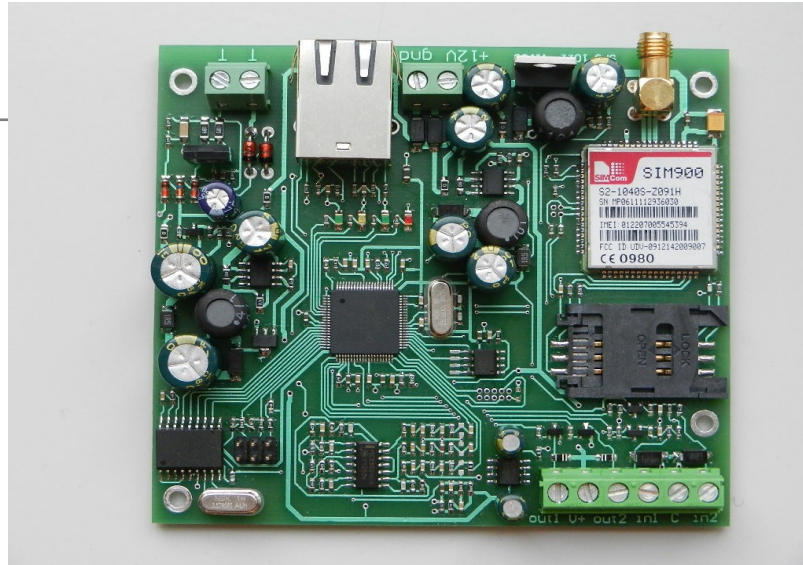


# SPG 1022

## Multi functional TCIP/GPRS Security transmission module

The module can take any conventional Ademco Contact ID security control panel and transfer it into SIA IP DC9 protocol either in 128 bit encrypted or not encrypted format. The SPG 1022 comes with 2 onboard input and 2 open collector output. SPG 1022 controls ethernet and GPRS channels and capable of sending e-mail and SMS messages.



### Features:

- SIA IP DC9 protocol (SIA TCP/UDP/Encrypted, Closed socket)
- 24 hour connection with the server (min.test signal interval is 10 sec)
- DHCP / Fix IP
- Two server reporting as backup, DYN DNS server
- Web user and installer interface for programming or control
- Remote access through Ethernet network.
- Firmware upgrade
- 2/2 input/ output
- E-mail and SMS sending
- SMS commanding

## 1.0. Hardware description

### 1.1. Main parts:

- 1 Fixing holes
- 2 Wire terminals
- 3 Jumpers
- 4 L1,L2, L3, L4 Control LEDs
- 5 Expansion board socket
- 6 GPRS control LEDs
- 7 SIM-holder
- 8 Ethernet socket

#### Fixing Holes:

There are 4 pcs of fixing holes.

#### Wire terminals:

GND Ground  
 +IN 12 VDC power  
 Telephone Input of the control panel

#### Jumpers:

Factory reset jumpers will re set the following parameters:

- Administrator password: admin
- IP address : 192.168.254.253
- Netmask: 255.255.255.0
- Gateway: 0.0.0.0
- HTTPd port: 8080

#### Reset:

- 1 Remove power
- 2 Connect pins with the provided shortcut jumper
- 3 Apply power
- 4 Remove jumper

- J1 Not used  
 J2 Automatic firmware download through Internet  
 J3 Factory reset

If J2 and J3 both closed than the latest firmware will be reloaded.

#### Control LEDs:

- L1 GSM STATUS  
 double flash – GSM is powered  
 SIM/ or other fault- 0.5s On /0.5s Off  
 If LED does not light – GSM is not ready (for example no GSM signal)  
 Module is on the GSM network but it can send only SMS – blink in every 4second  
 Normal status- Blink in 1s  
 SMS sending- blinks in 0,1 s  
 SMS receiving – long light  
 GPRS connected- double flash

- L2 General fault  
 L3 Communication fault  
 L4 Communication fault with the security control panel

#### SIM Card Holder:

Inserting or changing SIM cards is only allowed if the module is disconnected from the power.

#### Ethernet connector:

A standard RJ45 connector is to be used to connect to the local network. Connect it only when the module is not powered, this way the module will get IP address by the DHCP server. If there is no IP address service available, the module will use the factory default address. (192.168.254.253)

### 1.2. Other connectors:

#### Inputs:

The inputs of SPG 1022 on board can be activated either by contact or by voltage.

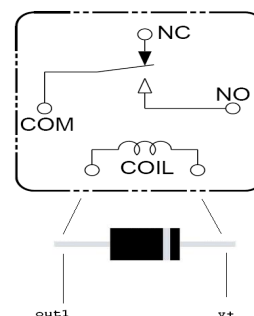


OR



#### Outputs:

Both output is open collector output. Output is limited to 150 mA. If you need to draw more current please use relay and a diode as circuit protection as shown here:



## 2.0. Specification:

Power supply:	12-16 VDC
Stand by current consumption:	80 mA
Max. current consumption:	150 mA
Size LxWxH:	85 x100x20mm
Screw terminal sizes:	Ø2,5 mm
Ethernet connector	Standard RJ45
Communication:	128 bit encrypted
Factory setting:	
Network mode:	Static IP
Factory IP-address:	192.168.254.253
Port :	8080
User name :	Admin
Password :	Admin

## 3.0. Status web browser

The web page of the panel could be found on the IP address as previously set.

### Administrator password:

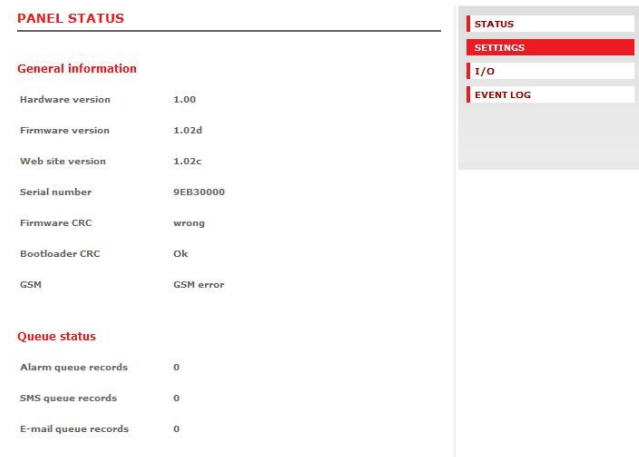
The entry name and password could be changed here.  
Max 15 character could be used.

Factory default: Admin, Password: Admin

### Warning:

In case of forgetting the password only reset jumper will reset the factory setting.

## 3.1. „Status” page:



**PANEL STATUS**

**General information**

Hardware version	1.00
Firmware version	1.02d
Web site version	1.02c
Serial number	9EB30000
Firmware CRC	wrong
Bootloader CRC	Ok
GSM	GSM error

**Queue status**

Alarm queue records	0
SMS queue records	0
E-mail queue records	0

### Panel Status Information:

- **MAC address:**  
Ethernet identification address, can not be changed. See the sticker on the pcb.
- **Hardware Version**  
Hardware revision nr.

- **Firmware Version**

The current firmware serial nr running in the module.

- **Web site version**

Version of the web page you see now

- **Serial Number**

Manufacturing serial number of the module

- **Firmware CRC**

After every re-start SPG 1000 controls the consistency of the program memory. It should display “OK”

- **Bootloader CRC**

After every re-start SPG 1000 controls the consistency of the bootloader memory. It should display “OK”

- **GSM Status:**

Displays the status of the panel connected to the GSM network.

### Panel Status:

- **Alarm queue:**

Unsent events on the IP network

- **SMS queue:**

Unsent text messages on the GSM network

- **Email queue:**

Unsent e-mails.

System	
Active process	none
ETH link test remain [sec]	120
GPRS link test remain[sec]	600
ETH Errors	0x04
GPRS errors	0x04
SMS Sending Enabled	0x00
SMS Ban	0x00

- **Active process**

This is a factory de-bug information. This shows the actual communication or process the SPG 1000 currently maintains.

- **Ethernet link test remain**

Remaining time to the next ethernet test time. Refreshes by F5 or page reload.

- **GPRS test remain**

Remaining time to the next GPRS test time. Refreshes by F5 or page reload

- **ETH errors**

Factory debug information.

- **GPRS errors**

Factory debug information.

- **SMS sending enabled**

Factory debug information.

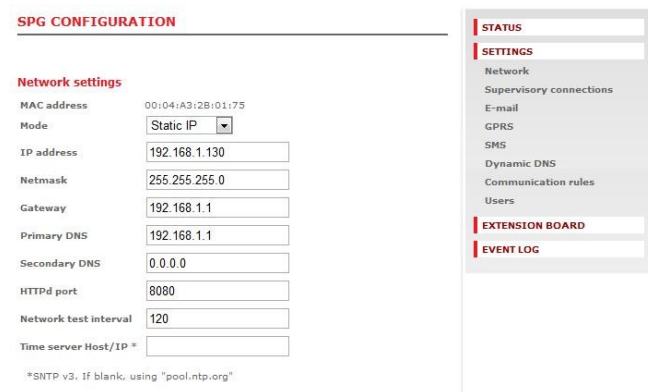
- **SMS ban**

Factory debug information.

## Programming:

### 3.2.

After enter the panel by its pre-set User and Password, you may change factory default settings.



The screenshot shows the 'SPG CONFIGURATION' web interface. On the left, under 'Network settings', there are input fields for:
 

- MAC address: 00:04:A3:2B:01:75
- Mode: Static IP (dropdown menu)
- IP address: 192.168.1.130
- Netmask: 255.255.255.0
- Gateway: 192.168.1.1
- Primary DNS: 192.168.1.1
- Secondary DNS: 0.0.0.0
- HTTPd port: 8080
- Network test interval: 120
- Time server Host/IP \*: (empty)

 A note at the bottom states: '\*SNTP v3. If blank, using "pool.ntp.org"'. On the right, a sidebar menu shows 'STATUS', 'SETTINGS' (selected), 'Network', 'Supervisory connections', 'E-mail', 'GPRS', 'SMS', 'Dynamic DNS', 'Communication rules', and 'Users'. Below the menu are sections for 'EXTENSION BOARD' and 'EVENT LOG'.

- **MAC address**

MAC address can not be changed. It's always fixed.

- **Mode:**

Network connection mode could be changed here

- Static IP address
- Dynamic Address.

Factory Default Static

#### Remark:

If you use dynamic IP, it's still advised to use one fixed IP in case if DHCP service would be not available. In this case the module will change to fixed IP address.

- **IP address:**

This is the several IP. This address is used for remote programming or remote controlling.

Factory Default 192.168.254.253

- **Netmask:**

It is for to be able to distinguish between IP address and identification parts for IP packet receivers.

Factory Default: Empty

- **Gateway:**

This is a device which is in connection with more TCP/IP network. It is for routing and forwarding different IP packets between these networks. For example a router address within the network is designated to gateway.

Factory Default : Empty

- **Nameserver (primary):**

This is a name server the server of the service provider. Write the provider server address into this field. ( A router could be also a name server)

Factory Default: Empty

- **Nameserver (secondary):**

This is a name server the server of the service provider.

Write the provider server address into this field. ( A router could be also a name server)

Factory Default: Empty

#### Warning:

Secondary name server should be accessible server since if the panel is connected by GPRS, it can not use the router on the same network as name server

- **HTTPd port:**

The config website port nr

Factory Default 8080

- **Network Test signal interval:**

The panel sends test signals to the servers in this given time periods.

Factory Default 120

- **Time server/Host**

The panel synchronize its internal clock to an available public time server on the internet.

Factory default is „pool.ntp.org”

#### Supervisory connection:

You may set the communication routes of the panel. SPG is able to send alarm signal in a multiply sequential paths, IP communication could be to two different server.



### Supervisory connections

Server Host Name/IP	<input type="text" value="91.82.255.200"/>
Server port	<input type="text" value="22000"/>
Server #2 Host Name/IP	<input type="text"/>
Server #2 port	<input type="text" value="0"/>
Protocol	<input type="text" value="TCP"/>
Encrypt	<input type="text" value="AES-128 encrypt"/>
AES key	<input type="text" value="0102030405060708090A0B0C0D0E0F00"/>
Account ID	<input type="text" value="11"/>
DC-09 Prefix	<input type="text"/>

### E-mail settings

E-mail sending enabled	<input type="text" value="Enabled"/>
From address	<input type="text"/>
SMTP server	<input type="text"/>
SMTP port	<input type="text" value="0"/>
Perform authentication	<input type="text" value="Disabled"/>
Username	<input type="text"/>
Password	<input type="text"/>

- **Server Host Name/IP:**

The server location of the central monitoring station. You may fill IP address or HOST name.

Factory Default 0:0:0:0

- **Server Port number:**

The port number of the central monitoring server.

Factory Default 0

- **#2 Server Host Name/IP:**

Secondary server location of the central monitoring station. You may fill IP address or HOST name.

Factory Default 0:0:0:0

- **#2 Server Port number:**

Secondary port number of the central monitoring server. T

Factory Default 0

- **Protocol:**

The required protocols could be selected here with the central monitoring server.

- SIA IP TC2700 (TCP, not encrypted, Close-socket)
- SIA IP UD2700 (UDP, not encrypted, Close-socket)
- SIA IP encrypted TC2700 (TCP, encrypted, Close- soc.)
- SIA IP encrypted UD2700 (UDP, encrypted, Close-soc.)

- **AES key:**

The encryption key should be added here which is given by the central monitoring station..

Factory Default: Empty

- **Account ID:**

SIA account id

Factory Default: Empty

- **Prefix:**

This is provided by the central monitoring station.

Factory Default: Empty

- **Time Zone:**

The module has a built in clock synchronization. Select the time zone where the panel is installed. A modul connects the „Timeserver” periodically to adjust timing. Important ! Synchronization could only be done if ethernet connection is available, and DNS server is set properly.

Factory Default GMT+00:00

- **Email:**

The module can send e-mail messages to pre-set addresses. Here you can adjust globally the e-mail reporting. Specific settings should be done at the expansion board programming section.

- **Email:**

Enabling or disabling any e-mail communication.

Factory Default: Disabled

- **From:**

The address of the module e.mail address.

Factory Default Empty

- **SMTP Server:**

The mail server smpt name (provided by Internet service providers.

Factory Default Empty

- **SMTP Port:**

Provided by Internet service provider.

Factory Default Empty

- **Authentication:**

If your Internet provider requires authentication you should set this accordingly.

Factory Default: Disabled

- **Username:**

Username is necessary to access mail server

.Factory Default Empty

- **Password:**

Password is necessary to access the mail server.

Factory Default Empty

## GPRS settings:

Wireless GSM communication settings could be made here.

### GPRS settings

APN	net
APN Username	/keep blank if not in use/
APN Password	/keep blank if not in use/
*Primary DNS	
*Secondary DNS	
*Network test interval	120 20..240 [sec]
Balance optimization	None

- Access point name (APN):**  
 Provided by the GSM provider  
[Factory Default: Empty](#)
- Username:**  
 Provided by the GSM provider  
[Factory Default: Empty](#)
- Password:**  
 Provided by the GSM provider  
[Factory Default: Empty](#)
- Nameserver (primary):**  
 Provided by the GSM provider. Many provider does not require any setting.  
[Factory Default: Empty](#)
- Nameserver (secondary):**  
 Provided by the GSM provider. Many provider does not require any setting.  
[Factory Default: Empty](#)
- Network test signal interval:**  
 Test signal interval only for GPRS transmission. From 60 sec.  
[Factory Default 0](#)
- Balance optimization:**  
 The panel could optimize the data traffic for time or for data volume, depending on your GSM subscription plan. Time based optimization will result that panel will spend the least amount of time on the GPRS network and will disconnect as soon as reporting is done. Data based optimization means that panel will remain connected to the GPRS network, assuming that more reporting will be done. Data optimisation will mean 10-30 minute disconnection from the GPRS network if there is no reporting needs.  
  
[Factory Default : Data optimization](#)

## SMS:

SMS global settings could be adjusted in this section.

### SMS settings

SMS sending	Enabled
Provider source address	/keep blank to use default/
Forward To	None
Forward Unknown SMS	Disabled
Sending limit	50 /max. count per hour per user/
SMS text prefix	Pepe1

- SMS sending:**  
 nEnabling SMS sending globally.  
 •  
[Factory Default Disabled](#)
- Provider source address:**  
 The GSM provider source address should be entered here, from where information is expected and should be forwarded to an other number (For example the balance information for pre-paid GSM services)  
[Factory Default: Empty](#)
- Forward to:**  
 The incoming SMS is forwarded to a pre-set number. Use international form for numbers.  
[Factory Default: Empty](#)
- Forward unknown SMS:**  
 Enables or disables forwarding SMS from an unknown number.  
[Factory Default : Empty](#)
- Sending limit:**  
 Maximum nr of SMS. The counter will reset in every hour. Zero value will result unlimited nr of SMS.  
[Factory Default 0](#)
- SMS text prefix:**  
 This will identify the panel if you expect more panels to send sms to the same number.



### Dynamic DNS:

SPG is enabled for Dynamic DNS communication even if it is installed on a non-fix IP address. Generate a DNS on a service provider . In this case both Internet and GPRS connection the module could be remotely accessed.

#### Dynamic DNS

Use dynamic DNS	Disabled ▾
dynDNS Server	dyndns.org ▾
dynDNS hostname	<input type="text"/>
Username	<input type="text"/>
Password	<input type="text"/>
Last known IP	57.69.144.88

#### Communication rules

Com path	Ethernet or GPRS ▾
*Web config via GPRS	Disabled ▾

\*Not available in this version

#### Remote users

##### USER#1

SMS address	<input type="text" value="+"/>
E-mail address	<input type="text"/>
Access level	Administrator ▾
Login name	<input type="text"/>
Password	<input type="text"/>

### Enable:

Enables the dynamic IP refresh.

Factory Default: Disable

#### • DynDns hostname:

Name you created on DNS server provider.

Factory Default: Empty

#### • Username:

Accessing the DNS service

Factory Default: Empty

#### • Password:

Accessing the DNS service

Factory Default : Empty

#### • Last known IP:

Displays the last known IP address of the SPG

### Communication Rules:

Communication rules of the panel are to be set here. SPG1000 can handle independent communication paths.

#### Sequence of IP reporting:

2 times Ethernet Nr 1 Server address

2 times Ethernet Nr 2 server address

GPRS 1 server , GPRS 2 server , in case of

successful communication SPG 1022 will

forward all messages at GPRS channel for 3

minutes. New event will trigger the repeat of this whole sequence.

After unsuccessful communication will result 3 minutes of brake.

If there is only GPRS set as primary and only communication than in case of unsuccessful event communication will be suspended for 15 minutes.

The panel will send SMS containing the Ademco Contact ID information received from the external security panel or from the internal inputs if neither Ethernet or GPRS communication path is unavailable.

#### • GPRS:

Setting the primary reporting route of the SPG is GPRS. We suggest to use this only if Ethernet is not available. More reporting routes you have the secure the operation. SPGs web programming page is available through Ethernet connecton only. If you use GPRS only communication only local programming is available for you.

Factory Default :Ethernet or Gprs

### Users

Default programming mode (Administrator) entry to the panel is Admin, Admin (user, password) . This rule applies only if none of the user login name and password is filled out. If you want to change on the default Administrator password you must use the User nr 1 section for the new password. You may not change Administrator access level on User nr 1. If you need User level access to be programmed you can do that in User Nr 2,3 section.

#### • SMS address:

The telephone nr of the user where SMS could be sent- Always use internation format ! e.g +36201111111

Factory Default: Empty

#### • Email address:

The e-mail address of the user where e-mail could be sent-

Factory Default : Empty

#### • Access level:

Access level of the user

Factory Default: None

#### • Login Name:

Login name for the SPG 1022 web page.

Factory Default Empty

#### • Password:

Login password of the SPG 1022 web page.

Factory Default Empty

## Input and outputs:

For wire connection please see the first pages of this manual.

### I/O SETTINGS

#### General

Remote Control  Enabled

Reply on SMS Command  Enabled

#### Inputs

#	Name	report disable	e-mail report	SMS report
in1	Switch right	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensitivity:		10	*0.1sec	Inverted: <input type="checkbox"/>
		CID	Partition	Zone
CID code:		135	1	50
				Restore <input checked="" type="checkbox"/>

#	Name	report disable	e-mail report	SMS report
in2	Switch left	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensitivity:		10	*0.1sec	Inverted: <input type="checkbox"/>
		CID	Partition	Zone
CID code:		136	1	51
				Restore <input checked="" type="checkbox"/>

- Remote control:**

You may choose this option whether you allow remote control (SMS) of your outputs.

- Reply on SMS command:**

The module will send you a reply by SMS to the commands you sent to the module by SMS.

#### Input name:

Type the input name here you wish to be sent by SMS-and e-mail. Please use only standard English alphabet.

#### Reporting Disable:

You disable reporting to the central monitoring station.

Factory setting is enable all reports

#### E-Mail report:

You ENABLE the module to send e-mail reports to the e-mail address you have entered in USER sections. For this you also have to fill out the sender e-mail address details at the Settings page / E-mail Settings

#### SMS Report

You ENABLE the module to send SMS reports to the phone numbers you have entered in USER sections. For this you also have to fill out the SMS details at the Settings page / SMS Settings

#### Sensitivity

This is designed to determine the sensitivity of this input. You may select 0,1 sec, 1 sec, or 1 min as base setting and you may enter a number to multiply that. This means that you might delay reporting if the input.

Example if this is connected to any sort of security sensor you may reduce false alarm by setting this to 0,5 sec or so.

If you have an event reported if its happening longer than your set value. For example you want to report AC loss , you may use a relay and enter 30 min or so. That will result that shorter AC failures than 30 mins will not be reported.

#### Inverted:

You may select if the input status is normal on open or closed circuit.

#### CID Code:

**\*more information about Contact ID is at the end of this manual.**

Enter the Ademco Contact ID code you wish the panel to report in case of this input opening/restoring. For event codes please refer Ademco Contact ID standard.

You may select the partition and zone number identifier to the code.

#### Restore:

Use this checkbox if you want the panel to report not only the alarm but the restore status of this zone. Restore code is according to Ademco contact ID (Identifier for alarm starts with 1 , restore is 3. Example 1130 is alarm, 3130 is restore.)

## Outputs

#### Outputs

#	Name	Type	CID to follow
out1		In1 following	
		Bistable/Monostable	Timer [sec]
Restore:		Bistable	0

#	Name	Type	CID to follow
out2		In2 following	
		Bistable/Monostable	Timer [sec]
Restore:		Bistable	12593

#### Output:

Write here the name of the output you want to see in SMS or e-mail reports what the module will send.

Output types:

Type
In1 following
SMS only
In1 following
In2 following
DTMF (CID) following
Ethernet fail
GPRS fail
SMS fail
General com. fail
General trouble
Low Battery



**SMS Only:**

The output will only be activated for incoming SMS

**Input following:**

The status of the output will follow the selected input

**DTMF Contact ID following**

The output will follow the contact ID Event code you type in, received from any security panel which sends Ademco Contact ID code to the panel telephone input.

Enter the 3 digit event code here you want to trigger the output. The Contact ID event qualifier will determine the operation of output in „bistable” mode. Event qualifier 1 will activate the output and 3 will de-activate.

Eg.: If you enter 130 to be followed than  
 1 130 burglary code will turn on the output  
 3 130 restore code will turn off the output

In monostable mode :

„1” event qualifier will activate the output for the timing you set, if new event comes it will re-trigger the input for the time you set.  
 „3” event qualifier will not reset the output.

**Low battery**

The module will detect low batt by measuring its power supply drops under 11 Volts DC. Low batt not only be reported to the central station but also the output could be activated for local signalling.

**Ethernet Fail**

The modul will detect Ethernet communication failure, and this not only will be reported to the central station but also the output could be activated for local signalling.

**GPRS Fail**

The modul will detect GPRS communication failure, and this not only will be reported to the central station but also the output could be activated for local signalling.

**SMS Fail**

If the module can not send out SMS the outputs will be activated.

**General com fail**

General communication Failure is : Ethernet + GPRS + SMS trouble - so absolute disability for communication to the outside World.

**General trouble**

General trouble is General Communication Failure + LOW batt

**Events:**

The panel has 250 event memory. This event list is written into the non volatile memore, so if power is removed, event is still stored. Real time clock of the module could only be synchronized if module can access Internet either through Ethernet or GPRS.

**Some limited information about Ademco DTMF Contact ID codes:**

The form of the message is:

**ACCT MT QXYZ GG CCC**

where:

ACCT = 4 Digit Account number (0-9, B-F)

MT = Message Type. This 2-digit sequence is used to identify the Contact ID message to the receiver. It may be transmitted as either 18 (preferred) or 98 (optional). New receiver implementations shall accept either a18 or a 98. Note that some older receivers may not accept 98 .

Q = Event qualifier, which gives specific event information:

1 = New Event or Opening  
 3 = New Restore or Closing  
 6 = Previously reported condition still present (Status report)

XYZ = Event code (3 Hex digits 0-9,B-F)

GG = Group or Partition number (2 Hex digits 0-9, B-F). Use 00 to indicate that no specific group or partition information applies.

CCC = Zone number (Event reports) or User # (Open / Close reports ) (3 Hex digits 0-9,B-F ). Use 000 to indicate that no specific zone or user information applies

S = 1 Digit Hex checksum calculated such that:  
 (Sum of all message digits + S) MOD 15 = 0