

**Security Module
SCM/S 1.1**

Intelligent Building Control



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This manual describes the Security Module SCM/S 1.1 with the device application "Security Slave/2.1".
Subject to change and errors excepted.

Exclusion of liability:

Despite checking that the contents of this publication match the hardware and software, deviations cannot be completely ruled out. Therefore, we cannot accept any liability for the contents of this publication. Any necessary corrections will be incorporated into new versions of the manual.
Please let us know if you have any suggestions for improvement.

1 General

The Security Module SCM/S 1.1 is a KNX device for modular installation with a module width of 2 space units. It is used as a central logic device to control security functions.

The Security Module evaluates detectors of any type (e.g. motion detectors, window and door contacts) and links them to form a security and monitoring system. It also controls the alarming and setting/unsetting logic.

The area of application includes small to medium-sized installations without VdS requirements, e.g. private homes, administrative and industrial buildings.

The device has three LEDs to indicate the operating state as well as a freely controllable relay output to which, e.g. a signaling device can be connected. The device also has a freely controllable internal buzzer.

1.1 System overview

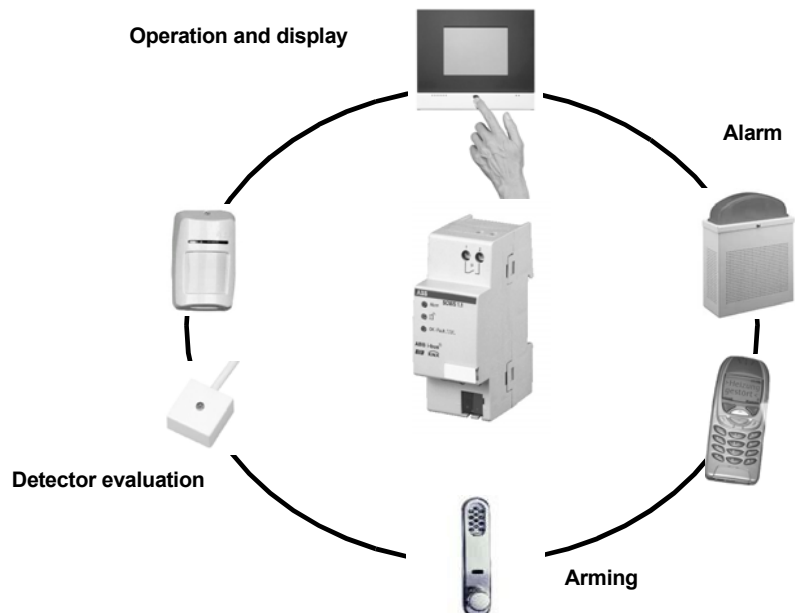


Fig. 1: System overview

The diagram above provides an overview of an alarm system based on the Security Module.

The main task of the device is to evaluate detectors connected to the bus via Zone Terminals.

A setting/unsetting device sets and unsets the alarm system. A bus-compatible LCD display (e.g. room panel) can be used as an operating and display unit.

Alarming is signaled e.g. via signaling devices or by telephone, which are controlled via a Switch Actuator or a Telephone Gateway.

1.2 Overview of product and functions

The Security Module evaluates up to 64 detectors or zones. It provides 64 objects for this purpose. It controls setting/unsetting and alarming and provides information about the system state at all times via status messages – also as text messages if required (14-byte objects).

The most important functions are briefly described below.

Detector evaluation

Each of the 64 detector inputs can be assigned to a **detector type** to specify whether and how an alarm is triggered in the event of a signal.

Detector types are e.g. intrusion detectors (internal protection/peripheral protection), tamper detectors, technical detectors or locking detectors.

Detectors can also be **disabled** so that, e.g., a window can be opened for ventilation without triggering an alarm. Disabling must be enabled in the parametrization.

Cyclical monitoring of detectors can ensure that the deliberate or accidental removal of a detector from the bus is detected.

Setting/unsetting

Setting/unsetting is a key security and convenience feature of a security system. The Security Module distinguishes between **internal and external setting**. **Delayed setting/unsetting**, which is started inside the building, is also possible.

If a building has several entrances, it is possible to operate several setting/unsetting devices in parallel.

Alarming

Alarming notifies the user depending on the type of signal (detector type) and the setting/unsetting state. Signaling is via an external or internal strobe light or siren.

The Security Module is specially designed for intelligent **remote signaling** via an EIB Telephone Gateway. It provides its own Group Objects for this purpose.

A floating **relay output** is available directly on the device for signaling purposes. In addition, signals can also be indicated by an **internal buzzer**.

Status messages

The Security Module provides detailed information about its state at all times. Important status messages are also sent as **text messages**.

Three **status LEDs** on the device also provide direct information about the state of the device. They signal correct operation, setting/unsetting state and alarm.

The history can be traced with the aid of the **event list memory** (250 entries).

2 Device technology

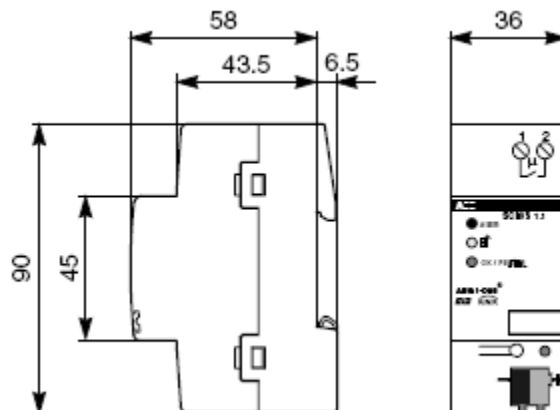


Links up to 64 signals, e.g. from Zone Terminals, via the KNX to form a monitoring system. The use of professional detectors is recommended. Freely programmable relay output, three LEDs for status indication and an internal buzzer.

2.1 Technical data

Power supply:	– Operating voltage	21 ... 30 V DC, via EIB
	– Max. current consumption	10 mA
Outputs:	– 1 floating relay contact	Switching voltage: 0...230 V AC/DC Switching current: 6A, AC1 freely programmable
Operating and display elements	– Red LED and button	For assigning the physical address
	– Red LED	- LED on: Alarm triggered - LED off: No alarm
	– Yellow LED	- LED on: System unset - LED off: System set
	– Green LED	- LED on: Ready for operation - LED flashing: Fault - LED off: Not in operation
Connections	– Floating output	2 screw terminals Connection cross section: Stranded: 0.2 – 2.5 mm ² Solid: 0.2 – 4 mm ²
	– EIB	Bus connection terminal, included in the scope of delivery.
Degree of protection	– IP 20, EN 60 529	
Ambient temperature range:	– Operation	- 5 °C ... 45 °C
	– Storage	-25 °C ... 55 °C
	– Transport	-25 °C ... 70 °C
Design:	– Mounting type	On 35 mm mounting rail, EN 60715
	– Mounting width	2 modules, 18 mm each
	– Housing dimensions (HxWxD)	90 x 36 x 64 mm
	– Mounting position	Any
	– Weight	0.1 kg
Approvals:	– EIB and KNX-certified	
CE marking:	– As per EMC Directive and Low-Voltage Directive	

2.2 Dimension drawing



2.3 Device connection

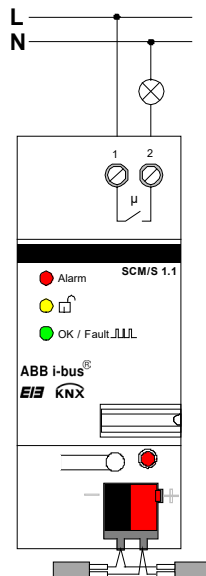


Fig. 2: Connection diagram

The device is connected via a bus connection terminal (included in the scope of delivery) to the ABB i-bus® KNX.

2.4 Description of inputs and outputs

The Security Module has a floating relay output. This output is freely programmable and can be used for signaling (e.g. bus voltage failure).

3 Commissioning

3.1 Overview/notes

The device application *Security Slave/2.1* controls all the functions of the Security Module. ETS2 **V1.2a** or later is required for programming. If ETS3 is used, a file of type "VD3" is to be imported. The program is located in the ETS product tree in *Security and Surveillance / Controller*.

Device application	Number of Group Objects	Max. number of group addresses	Max. number of assignments
Security Slave/2.1	145	254	255

The device is suitable for installation in distribution units or small housings on 35 mm mounting rails according to EN 60715. Make sure the device is accessible for operation, testing, visual inspection, maintenance and repair.

3.2 Parameters

3.2.1 General functions

The parameters described here are visible for both operating modes ("Master" and "Slave").

3.2.1.1 "General" parameter window

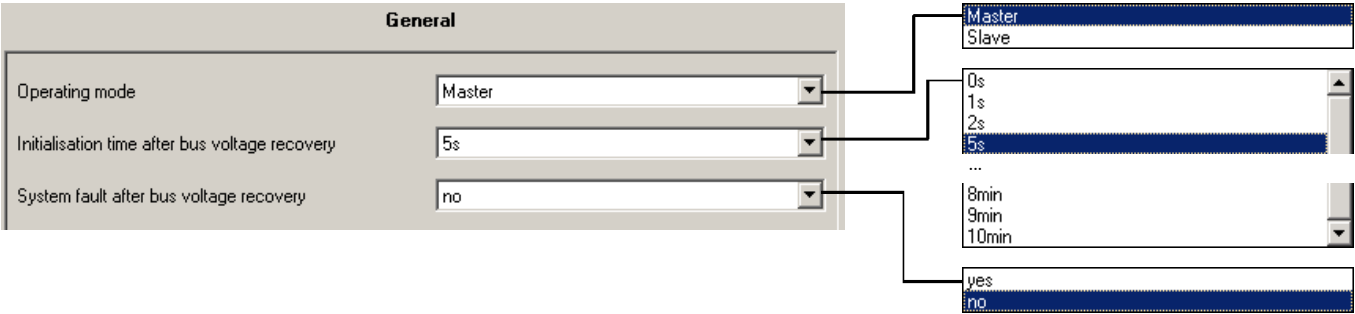


Fig. 3: "General" parameter window

Operating mode

Options: Master
 Slave

The operating mode specifies whether the device operates alone or whether it forms a monitoring system together with other devices. You can find more information about the different operating modes in section 4.2.

As a "*Master*", the device either operates alone or can be extended by means of one or more slaves. The parameters are described in section 3.2.2.

As a "*Slave*", the device is used to expand an alarm system. This system can be another Security Module in the "*Master*" operating mode or an intruder alarm control panel with KNX interface, for example. The slave has the task of combining the signals from several detectors and forwarding them to the master as a collective message. The parameters are described in section 3.2.3.

Initialization time after bus voltage recovery

Options: 0s / 1s / ... / 5s / ... / 10min

During the initialization time, telegrams are only received but not evaluated. No telegrams are sent. The object values are only read and processed after the initialization time has elapsed.

The purpose of the initialization time is to give the detectors time to update their true state on the bus.

Fault after bus voltage recovery

Options: yes / no

Here it can be set whether the device switches to fault after bus voltage recovery so that the user can be informed about the bus voltage failure.

The fault must be reset using the "Reset" object.

3.2.1.2 "Function" parameter window

The screenshot shows the 'Function' parameter window with the following settings and their corresponding dropdown menus:

- Send "Telegr. life signal" cyclically on the bus:** yes (dropdown: yes, no)
- Sending cycle time:** 10s (dropdown: 10s, 20s, 30s, ..., 30min, 45min, 60min)
- Send "Status externally set" cyclically on the bus:** yes (dropdown: yes, no)
- Sending cycle time:** 60s (dropdown: 10s, 20s, ..., 60s, ..., 30min, 45min, 60min)
- Reaction of relay output:** Normally open contact (dropdown: Normally open contact, Normally closed contact)
- Reaction on bus voltage failure:** unchanged (dropdown: unchanged, relay contact closed, relay contact open)
- Reaction on bus voltage recovery:** unchanged (dropdown: yes, no)
- Sending the system state and alarms via report texts (14 bytes objects):** yes (dropdown: no updating, read objects "Date" and "Time", request via object)
- Updating internal time and date after bus voltage recovery:** read objects "Date" and "Time" (dropdown: dd.mm.yy, mm/dd/yy, yy-mm-dd)
- Format of date in event list memory:** dd.mm.yy (dropdown: dd.mm.yy, mm/dd/yy, yy-mm-dd)

Fig. 4: "Function" parameter window

Enable "Telegr. Life signal" object

Options: yes / no

This parameter enables the object "Telegr. Life signal". Via this object, the device can send a cyclical telegram to a higher-level device that monitors its operation. The time interval at which the object is sent cyclically is set in the next parameter "**Sending cycle time**".

Send "Status Externally set" cyclically on the bus

Options: yes / no

Set here whether the object "Status Externally set" is sent cyclically on the bus. The time interval at which the object is sent cyclically is set in the next parameter "**Sending cycle time**".

This parameter is available only in the operating mode "Master".

Reaction of relay output

Options: Normally open contact / Normally closed contact

This parameter sets whether the relay output operates as a *normally closed contact* or *normally open contact*. It describes the function of the object *Relay output - Switch*:

If set to "*Normally open contact*", the object value "1" causes the relay to close. The object value "0" opens it.

If set to "*Normally closed contact*", the object value "1" causes the relay to open. The object value "0" closes it.

Reaction on bus voltage failure

Option: unchanged
close relay
open relay

Set here the reaction of the relay output if there is a bus voltage failure.

Reaction on bus voltage recovery

Option: unchanged
close relay
open relay

Set here the reaction of the relay output when bus voltage recovery occurs.

Relay function

Options: Control via object
Externally set
Internally set
Setting confirmation (time-limited)
Ext. sig. dev., strobe light (continuous alarm)
Ext. sig. dev., siren (time-limited)
Internal signaling device
not used

Set here whether the relay in the Security Module is to be controlled via a Group Object (*Control via object*), or whether it indicates directly a Security Module state. The states correspond to the Group Objects of the same name.

With the setting *not used* the relay is only switched if there is a bus voltage failure or when bus voltage recovery occurs (if parameterized). Otherwise it has no function.

Send the system state and alarms as text messages (14-byte objects)

Options: yes / no

This parameter enables text messages via 14-byte objects. The following states and events can be indicated via text messages:

Object name/function	Explanation
Event log / Text, message Event log / Text, detector name Event log / Text, date/time	For reading the event list memory.
Detector monitoring / Text, triggered detector	For indicating which detectors have been triggered.
Alarming / Text, alarm type Alarming / Text, triggered detector	Indicates, in the event of an alarm, which alarm has been triggered by which detector.
Setting/unsetting / Text, setting status	Indicates the current setting/unsetting state.

The text sent is specified in the parameters.

Updating internal time and date after bus voltage recovery

Options: do not request
 read objects "Date" and "Time"
 request via object

If bus voltage failure occurs, the time and date in the device are lost. This parameter is used to set how the device is informed about the time and date.

With the setting *"do not request"* the master clock must actively send the date and time on the bus after bus voltage recovery. Of course, this action is only possible if the master clock supports this function.

With the setting *"read objects Date and Time"* the Security Module actively reads the object values via the bus.

With the setting *"request via object"*, the Security Module sends the object "Request date/time" on the bus immediately after bus voltage recovery and requests the time and date from the master clock.

Format of date in event list memory

Options: dd.mm.yy
 mm/dd/yy
 yy-mm-dd

Set here how the date is indicated as a text message in the object "Text, date/time" while reading the event list memory.

"dd.mm.yy" as in "29.04.05"

"mm/dd/yy" as in "04/29/05"

"yy-mm-dd" as in "05-04-29" (international notation)

Send scene values on setting and alarms

Options: yes / no

Via the Group Object *Scene* the Security Module can send a scene value during setting or if there is an alarm. In this way the lighting in the house can be switched off and the outside lighting switched on after setting.

This parameter enables the *Scene* parameter window, in which the scene values can be specified.

The scene function requires actuators that support the 8-bit scene object. This is the case with most ABB actuators.

3.2.2 "Master" operating mode

In the "Master" operating mode, the Security Module either operates alone or evaluates other Security Modules as a central master.

3.2.2.1 "Setting/unsetting" parameter window

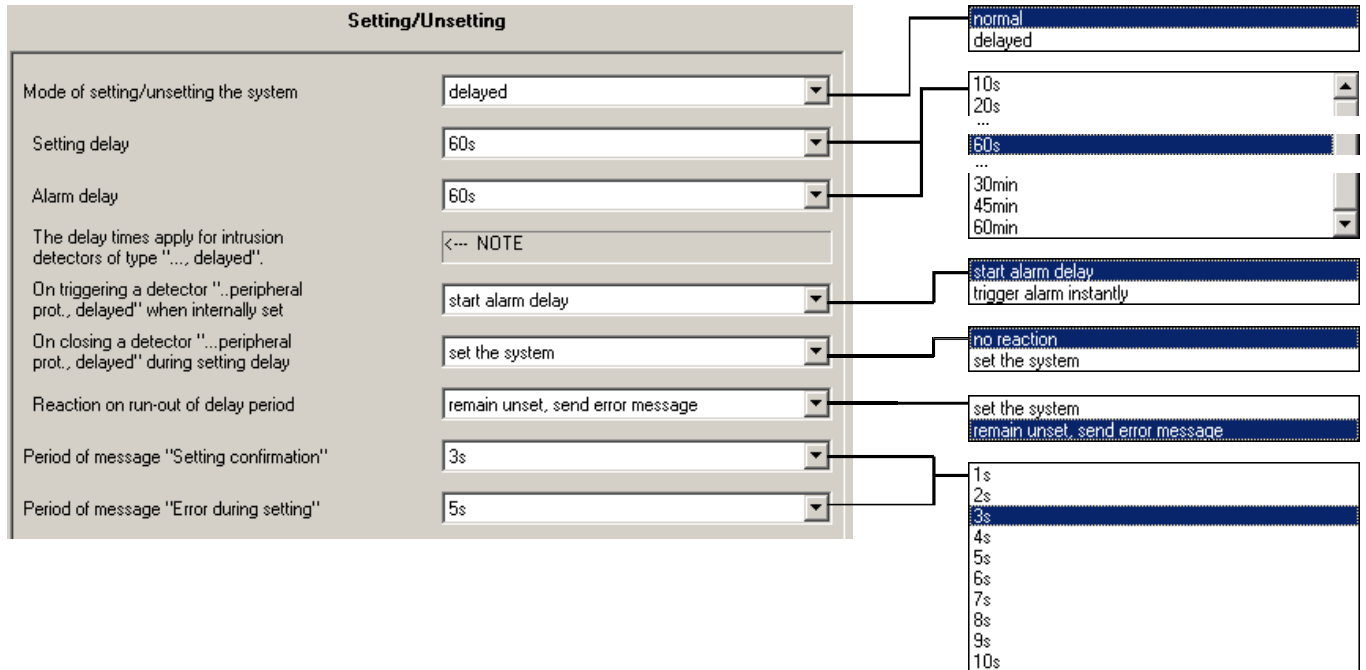


Fig. 5: "Setting/unsetting" parameter window (Master mode)

Type of external setting

Here it can be set whether external setting/unsetting is to be "normal" or "delayed".

With the *normal* setting, the system is set/unset immediately after the setting request is received.

With the *delayed* setting, the user starts the delay time from inside the security area. The user can then leave the security area within the delay time. All detectors of type "access" are not yet set.

You can find more information about the setting/unsetting options in section 4.4.

Setting delay

With delayed setting/unsetting, set here how much time the user has to leave the security area after a setting request.

Alarm delay

With delayed setting/unsetting, set here how much time the user has to unset the alarm system after entering the security area.

On triggering a detector "...peripheral prot., delayed" when internally set

Here it can be set whether the triggering of an access detector with an internally set system immediately triggers an alarm (option *trigger alarm instantly*) or whether the delay time is started (option *start alarm delay*). During the delay time, the user can unset the alarm system.

Practical background:

If, for example, the wife has set the system internally, this parameter can be used to set whether the husband, who arrives home late, can enter the house normally and then unset the system, or whether the wife must first unset the system. In the latter case, securing the door against unintentional opening (e.g. "SafeKey" or a bolt lock) is strongly recommended, as otherwise opening the door will trigger an internal alarm.

On closing a detector "...peripheral prot., delayed" during setting delay

Here, the system can be set immediately if the user locks the outer door during the delay time (option *set the system*).

The function operates as follows: if a detector of the type *Intrusion detector (peripheral protection, delayed)* is closed during the delay time, the device is set immediately. This detector can be linked, e.g., to the bolt switch contact on a door.

Reaction on expiry of delay period

This parameter is visible if the value *set the system* has been set in the parameter *On closing a detector "...peripheral prot., delayed" during setting delay*

Set here the reaction when the delay time expires. The system may be set or an error message may appear (object *Error during setting* = 1).

Length of setting confirmation

Set here the time after which the object *Setting confirmation* is automatically reset to the value "0".

The object *Setting confirmation* indicates to the user that the system has been set successfully.

Length of error message

Set here the time after which the object *Error during setting* is automatically reset to the value "0".

The object *Error during setting* signals an error during setting.

3.2.2.2 "Setting Status Texts" parameter window

This parameter window is used to set the values with which the object "Text, setting status" displays the setting status of the system. Max. 14 characters are possible.

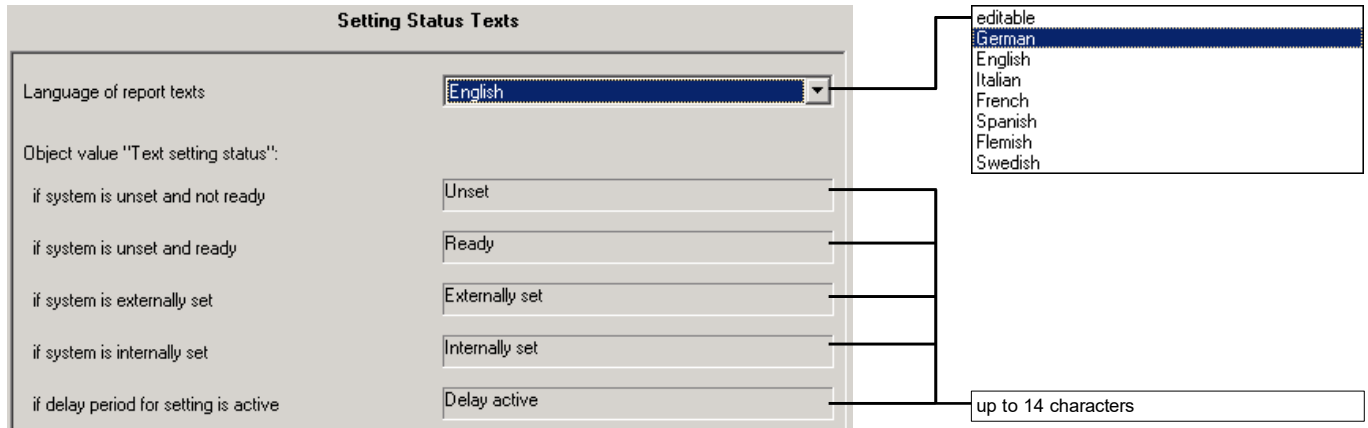


Fig. 6: "Setting Status Texts" parameter window (Master mode)

Language of text messages

Predefined texts for some languages can be selected here. The texts can be edited as required with the parameter value "editable".

Object value "Text, setting status"

In "System unset and not ready" state

The device is unset but not ready for setting because an event is pending (e.g. a detector has been triggered or the device has not yet been reset after an alarm).

In "System unset and ready" state

The device is unset and can be set.

In "Externally set" state

The device is set externally, i.e. all internal and peripheral detectors are activated.

In "Internally set" state

The device is set internally, i.e. only peripheral detectors are activated.

In state "Delay time active"

The delay time for setting is active. This parameter is only relevant if delayed setting is configured (see "Setting/unsetting" parameter window).

3.2.2.3 "Alarm Texts" parameter window

This parameter window is used to set the texts with which the **object "Text, alarm type"** indicates the type of alarm if there is an alarm. Max. 14 characters are possible.

The screenshot shows a window titled "Alarm Texts". Inside, there is a table with two columns: "Object value 'Text name of alarm':" and a text input field. The table contains the following rows:

Object value "Text name of alarm":	Text input field
on intrusion alarm	Intrusion
on fault	Fault
on tamper alarm	Sabotage
on panic alarm	Panic alarm
on technical alarm 1	Tech. alarm 1
on technical alarm 2	Tech. alarm 2

To the right of the text input fields, there is a bracket indicating that the text length is limited to 14 characters.

Predefined texts for some languages can be selected in the "Setting Status Texts" parameter window. The texts can be edited as required with the parameter value "editable".

Object value "Text, alarm type"

Message on intrusion alarm

...

Message on technical alarm 2

These parameters set which text messages the object "Text, alarm type" sends depending on the type of alarm.

3.2.2.4 "Alarm: General" parameter window

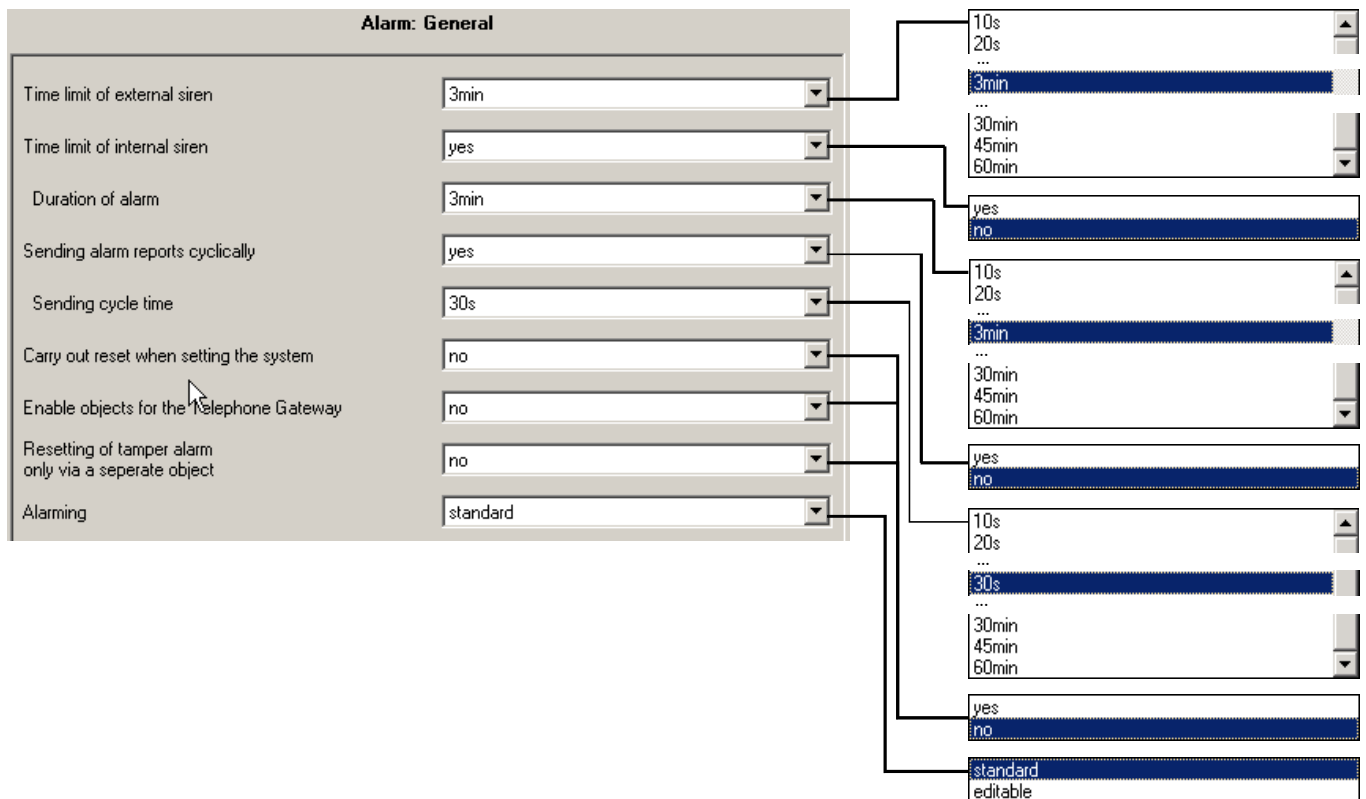


Fig. 7: "Alarm: General" parameter window (Master mode)

Time limit of external siren

The external siren (object *Ext. sig. dev., siren*) is only ever activated for a limited time. The time is set here.

Remark: The activation of external strobe lights (object "Ext. sig. dev., strobe light") is not time-limited.

Time limit of int. signaling device

Set here whether the internal signaling device is to switch off again after a certain time. If yes, set this time in the **parameter "Duration of alarm"**.

Send alarm messages cyclically

Set here whether the objects "Ext. sig. dev., strobe light", "Ext. sig. dev., siren" and "Internal signaling device" are sent cyclically when they have the object value "1". If yes, set this time in the **parameter "Sending cycle time"**.

Depending on the alarm triggered, the following objects are also sent cyclically:

- Telegr. Intrusion alarm
- Telegr. Technical alarm 1
- Telegr. Technical alarm 2
- Telegr. Panic alarm
- Telegr. Tamper alarm
- Telegr. Fault

Carry out reset when setting the system

Setting can be forced here, even if a saved alarm normally prevents setting.

If set to "yes", it is checked whether saved events are pending before setting. If yes, the alarm system is reset first and then set.

Resetting of tamper alarm only via a separate object

Here, resetting the tamper alarm can be reserved for only certain people, e.g. the system installer.

This parameter enables the object *Tamper reset*. Then the object *Telegr. Tamper alarm* can only be reset via this object. Otherwise, this object has the same function as the object *Reset* (see object description in section 3.3.1).

Enable objects for Telephone Gateway

This parameter enables also the objects for remote alarming via a Telephone Gateway. These are the following objects:

Object function	Object name
Telegr. Intrusion alarm	Telephone Gateway
Telegr. Technical alarm 1	Telephone Gateway
Telegr. Technical alarm 2	Telephone Gateway
Telegr. Panic alarm	Telephone Gateway
Telegr. Tamper alarm	Telephone Gateway
Telegr. Fault	Telephone Gateway

Alarming

Here, the type of alarming can be adapted to specific requirements. The parameter enables five parameter windows in which alarming can be specified by the user.

In general, alarming is triggered depending on the type of detector that has triggered the alarm. You can find an overview of the default settings in section 4.5.2.

Further information about alarming options can be found in section 4.5.

3.2.2.5 "Intrusion alarm" parameter window

Set here which signaling device indicates an intrusion alarm.

The parameter window is visible if enabled in the parameter "Alarming" ("Alarm Texts" parameter window).

Parameter	Value	Options
Alarming on intrusion alarm...		
External sirene	no	yes, no
Internal sirene	yes	yes, no
Telephone Gateway	no	yes, no
If the system is internally set:		
External sirene	yes	yes, no
Internal sirene	no	yes, no
Telephone Gateway	yes	yes, no

Fig. 8: "Intrusion alarm" parameter window (Master mode)

If the system is internally set: (3 parameters)

These three parameters specify which signaling device is used to indicate an intrusion alarm if the system is set internally. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

If the system is externally set: (3 parameters)

These three parameters specify which signaling device is used to indicate an intrusion alarm if the system is set externally. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

3.2.2.6 "Tamper alarm" parameter window

Set here which signaling device indicates a tamper alarm.

The parameter window is visible if enabled in the parameter "Alarming" ("Alarm Texts" parameter window).

Tamper alarm

Alarming on tamper alarm...

If the system is unset:

External sirene: no

Internal sirene: yes

Telephone Gateway: no

If the system is internally set:

External sirene: no

Internal sirene: yes

Telephone Gateway: no

If the system is externally set:

External sirene: yes

Internal sirene: no

Telephone Gateway: yes

yes/no options for each section:

- For 'If the system is unset:': yes, no
- For 'If the system is internally set:': yes, no
- For 'If the system is externally set:': yes, no

Fig. 9: "Tamper alarm" parameter window (Master mode)

If the system is unset: (3 parameters)

These three parameters specify which signaling device is used to indicate a tamper alarm if the system is unset. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

If the system is internally set: (3 parameters)

These three parameters specify which signaling device is used to indicate a tamper alarm if the system is set internally. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

If the system is externally set: (3 parameters)

These three parameters specify which signaling device is used to indicate a tamper alarm if the system is set externally. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

3.2.2.7 "Panic/Fault" parameter window

Set here which signaling device indicates a panic alarm or fault.

The parameter window is visible if enabled in the parameter "Alarming" ("Alarm Texts" parameter window).

Panic/Fault	
Alarming on panic alarm...	
external sirene	no
internal sirene	no
Telephone Gateway	yes
Alarming on fault...	
Telephone Gateway if unset	no
Telephone Gateway if internally set	no
Telephone Gateway if externally set	yes

Fig. 10: "Panic/Fault" parameter window (Master mode)

external signaling device

internal signaling device

Telephone Gateway

Use these parameters to specify as required which signaling devices signal a panic alarm. Alarming is generally independent of the setting/unsetting state.

Telephone Gateway if unset

Telephone Gateway if internally set

Telephone Gateway if externally set

A fault can be signaled via a Telephone Gateway (object "Telephone Gateway - Telegr. Fault"). These parameters specify the setting/unsetting status in which the Telephone Gateway signals a fault.

Tip: The object "Alarming - Telegr. Fault" is suitable for local indication.

3.2.2.8 "Tech. Alarm 1" and "Tech. Alarm 2" parameter window

Set here which signaling device indicates a technical alarm. Technical alarms 1 and 2 have the same functionality and are described together here.

The two parameter windows are visible if enabled in the parameter "Alarming" ("Alarm Texts" parameter window).

Tech. Alarm 1

Alarming on technical alarm 1...

If the system is unset:

External sirene: no

Internal sirene: yes

Telephone Gateway: no

If the system is internally set:

External sirene: no

Internal sirene: yes

Telephone Gateway: no

If the system is externally set:

External sirene: no

Internal sirene: no

Telephone Gateway: yes

Fig. 11: "Tech. Alarm 1" parameter window (Master mode)

If the system is unset: (3 parameters)

These three parameters specify which signaling device is used to indicate a technical alarm if the system is unset. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

If the system is internally set: (3 parameters)

These three parameters specify which signaling device is used to indicate a technical alarm if the system is set internally. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

If the system is externally set: (3 parameters)

These three parameters specify which signaling device is used to indicate a technical alarm if the system is set externally. Alarming can be via external signaling devices (siren/strobe light), internal signaling devices or via a Telephone Gateway.

3.2.2.9 "Detector Inputs" parameter window

Use this parameter window to enable the detectors and make general settings.

Detector Inputs	
Enable detector inputs 1-16	no
Enable detector inputs 17-32	no
Enable detector inputs 33-48	no
Enable detector inputs 49-64	no
Cyclic surveillance time of detector objects	60s
Detector inputs can be disabled	yes
Enable disabled detectors when unsetting the system	no
Value of object "Text triggered detectors" if no zone is triggered	...
Read out detector status after bus voltage recovery	no

Callout options:

- Enable detector inputs 1-16, 17-32, 33-48, 49-64: yes, no
- Cyclic surveillance time of detector objects: 10s, 20s, 60s, 30min, 45min, 60min
- Detector inputs can be disabled: yes, no
- Value of object "Text triggered detectors" if no zone is triggered: up to 14 characters
- Read out detector status after bus voltage recovery: yes, no

Fig. 12: "Detector Inputs" parameter window (Master mode)

Enable detector inputs 1-16

...

Enable detector inputs 49-64

The Group Objects for 16 detector inputs can be enabled in each of these four parameters. If enabled, the corresponding "Detector..." parameter windows appear for making the settings for the detector inputs.

Monitoring time for detector objects

Set here the period for monitoring cyclically the Group Objects for the detector inputs.

Use parameter windows "01-02" ... "63-64" to set whether a detector object is monitored cyclically at all.

With cyclical monitoring active, a regular telegram is expected from a detector object within the monitoring time. Failure to receive this telegram is equivalent to detector triggering.

Caution: The monitoring time should be at least twice as long as the cyclical transmission time for the detectors. Please pay attention to the bus load if detectors are monitored cyclically.

Detector inputs can be disabled

Detectors can be disabled here. Disabled detectors are never triggered.

This parameter enables 15 objects "Disable object 1-15". A disable object can be assigned to each individual detector in the parameter "Object switched off by" (parameter window "01-02" ... "63-64").

Enable disabled detector inputs when unsetting the system

If "yes" is set in this parameter, all disabled detectors are enabled again during unsetting. This parameter can, e.g., prevent a detector from accidentally remaining permanently disabled.

Object value "Text triggered detect." if no detector has triggered

Max. 14 characters can be entered.

Specify here what is indicated on the text display if no detector has triggered.

The user can use the object *Text, triggered detector* to display in plain text the name of the detectors currently triggered.

This parameter is visible if the 14-byte text messages have been enabled (*Function* parameter window).

Read out detector status after bus voltage recovery

After bus voltage recovery, the device can read the status of detectors independently. This is useful, e.g., if the detectors cannot send their state on their own and therefore their current status is not known after bus voltage recovery. For more details, see section 4.7.

3.2.2.10 "Scenes" parameter window

Use this parameter window to specify which scene numbers are sent via the object *Scene*.

1.1.1 SCM/S1.1 Security Module, MDRC > Scenes		
General	Scene on internal setting	No scene ▼
Function	Scene on internal unsetting	No scene ▼
Setting	Scene on external setting	No scene ▼
	Scene on external unsetting	No scene ▼
Alarm: General	Scene on delayed setting	No scene ▼
Detector inputs	Scene on internal alarm	No scene ▼
Scenes	Scene on alarm	No scene ▼

Scene on ...

Set here which scene value the Group Object *Scene* sends on the bus for the corresponding events. The following table provides a more detailed explanation of the events:

Type of event	Explanation
Scene on internal setting	Device has been set internally.
Scene on internal unsetting	Device has been unset after it was set internally previously.
Scene on external setting	Device has been set externally
Scene on external unsetting	Device has been unset after it was set externally previously.
Scene on delayed setting	Delayed setting/unsetting has been started (delay time running)
Scene on internal alarm	The internal signaling device (horn) has been triggered.
Scene on alarm	An external signaling device (siren/strobe light) has been triggered.

3.2.2.11 "01-02" to "63-64" parameter windows

These parameter windows are visible if enabled in the "Detector Inputs" parameter window. Two "Detector input..." objects are specified in each window. All 64 detector inputs have the same functionality.

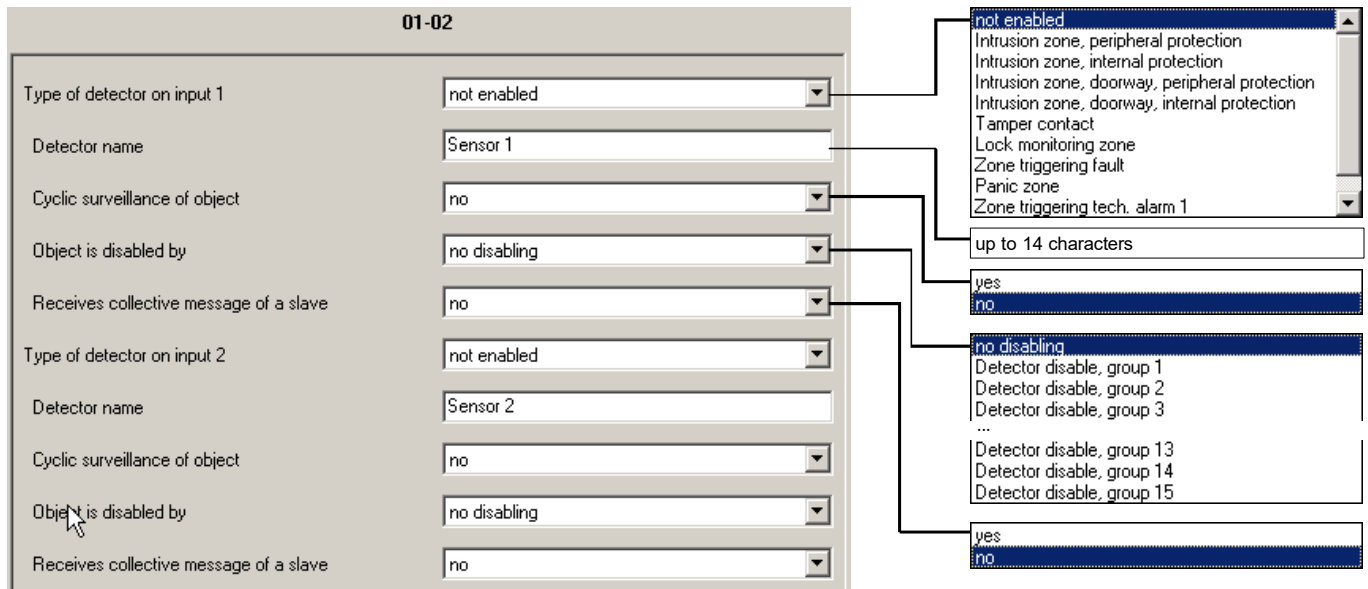


Fig. 13: "01-02" parameter window (Master mode)

Type of detector at input ...

This parameter specifies the type of detector assigned to the object "Detector input...". If the object receives the telegram value "1", this value is evaluated depending on the detector type, the setting/unsetting state and, if necessary, an alarm is triggered, for example. You will find more information about the detector types in section 4.3.

Detector name

Specify here the name of the detector. This name is sent, e.g., via the object "Text, alarming detector" if this detector triggers an alarm. If nothing or only spaces are entered in this parameter, nothing is sent.

Monitor object cyclically

Cyclical monitoring of the "Detector input ..." object can be enabled here.

With cyclical monitoring, the object expects a telegram at regular intervals. The failure to receive a telegram for the duration of the monitoring time is equivalent to the detector triggering. The monitoring time is set in the "Detector Inputs" parameter window.

The parameter is visible if the value "no" is set in the "Receives collect. mess. from a slave" parameter.

Object switched off by

Set here which "Disable object" can disable the detector. A disabled detector is never triggered. If "no disabling" is set here, the detector cannot be disabled.

The parameter is visible if "no" has been set in the parameter "Receives collect. mess. from a slave".

Receives collect. mess. from a slave

Specify here whether the message is sent by a subordinate Security Module in the "Slave" operating mode, i.e. in the form of a collective message (option: yes).

This parameter is necessary for the following reason:

The collective message from a slave device is handled differently in relation to storage in the event list memory: the message from a slave device is saved in the event list memory in the slave device.

You can find more information about the function of the Master-Slave mode in section 4.2.2.

3.2.3 "Slave" operating mode

In the Slave mode, the Security Module is always subordinate to a central alarm system, which is referred to as the "master". The slaves in such a system only pre-evaluate detectors.

The "General" and "Function" parameter window are explained in section 3.2.1. You can find further explanations about the Master-Slave mode in section 4.2.2.

3.2.3.1 "Setting Status Texts" parameter window

Setting/unsetting is saved in the event list memory. The texts saved there can be specified in this parameter window. The setting/unsetting status of the slave is specified by the master via the "Status master" objects.

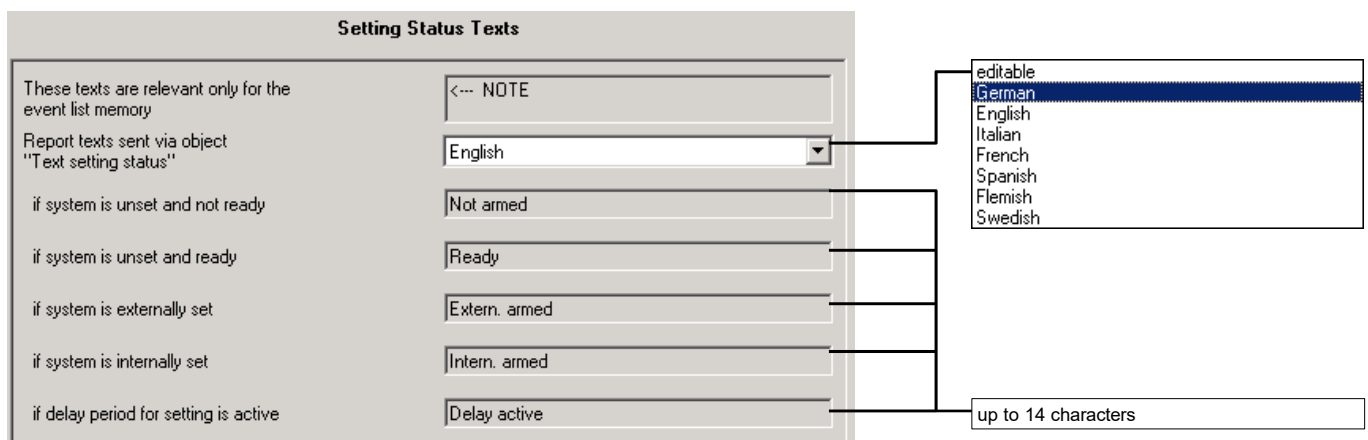


Fig. 14: "Setting Status Texts" parameter window (Slave mode)

Text messages via object "Text, setting status"

Predefined texts for some languages can be selected here. The texts can be edited as required with the parameter value "editable".

In "System unset and not ready" state

The device is unset but not ready for setting because an event is pending (e.g. a detector has been triggered or the device has not yet been reset after an alarm).

In "System unset and ready" state

The device is unset and can be set.

In "Externally set" state

The device is set externally, i.e. all internal and peripheral detectors are activated.

In "Internally set" state

The device is set internally, i.e. only peripheral detectors are activated.

In state "Delay time active"

The delay time for setting is active. This parameter is only relevant if delayed setting is configured (see "Setting/unsetting" parameter window).

3.2.3.2 "Alarm Texts" parameter window

This parameter window is visible if sending the system state and alarms as text messages (14-byte objects) is enabled (see "Function" parameter window).

Alarm Texts	
These texts are relevant only for the event list memory	<--- NOTE
Report text on intrusion alarm	Intrusion
Report text on fault	Fault
Report text on tamper alarm	Sabotage
Report text on panic alarm	Panic alarm
Report text on technical alarm 1	Tech. alarm 1
Report text on technical alarm 2	Tech. alarm 2

up to 14 characters

Fig. 15: "Alarm Texts" parameter window (Slave mode)

Predefined texts for some languages can be set in the "Setting Status Texts" parameter window. The texts can be edited as required with the parameter value "editable".

Message on intrusion alarm

...

Message on technical alarm 2

Set here which text messages are saved in the event list memory for this device for different alarms.

3.2.3.3 "Detector Inputs" parameter window

The detectors are enabled and the cyclical monitoring time set in this parameter window.

Detector Inputs	
Enable detector inputs 1-16	no
Enable detector inputs 17-32	no
Enable detector inputs 33-48	no
Enable detector inputs 49-64	no
Cyclic surveillance time of detector objects	60s
Detector inputs can be disabled	yes
Enable disabled detectors when unsetting the system	no
Value of object "Text triggered detectors" if no zone is triggered	...
Read out detector status after bus voltage recovery	no

Expanded views of the dropdown menus:

- Enable detector inputs 1-16: yes, no
- Enable detector inputs 17-32: yes, no
- Enable detector inputs 33-48: yes, no
- Enable detector inputs 49-64: yes, no
- Cyclic surveillance time of detector objects: 10s, 20s, ..., 60s, 30min, 45min, 60min
- Detector inputs can be disabled: yes, no
- Enable disabled detectors when unsetting the system: yes, no
- Value of object "Text triggered detectors" if no zone is triggered: up to 14 characters
- Read out detector status after bus voltage recovery: yes, no

Fig. 16: "Detector Inputs" parameter window (Slave mode)

Enable detector inputs 1-16

...

Enable detector inputs 49-64

16 detector inputs can be enabled in each of these 4 parameters. If enabled, the corresponding "01-02" to "63-64" parameter windows appear for making the settings for the detectors.

Monitoring time for detector objects

Set here the period for monitoring cyclically the detector objects.

Cyclical monitoring can be activated separately for each detector object ("01-02" ... "63-64" parameter window). In this situation, the object expects a cyclical telegram. Failure to receive the telegram for the duration of the monitoring time causes the Security Module to react as if the detector has triggered.

Caution: The monitoring time should be at least twice as long as the cyclical transmission time for the detectors. Please pay attention to the bus load if detectors are monitored cyclically.

Detector inputs can be disabled

Detectors can be disabled here. Disabled detectors never trigger.

This parameter enables 15 objects "Disable object 1-15". A disable object can be assigned to each detector in the parameter "Object switched off by" (parameter window "01-02" ... "63-64").

Enable disabled detectors when unsetting the system

If "yes" is set in this parameter, all disabled detectors are enabled again during unsetting. This parameter can, e.g., prevent a detector from accidentally remaining permanently disabled.

Read out detector status after bus voltage recovery

After bus voltage recovery, the device can read the status of detectors independently. This is useful, e.g., if the detectors cannot send their state on their own and therefore their current status is not known after bus voltage recovery. For more details, see section 4.7.

Object value "Text triggered detect." if no detector has triggered

Specify here what is indicated on the text display if no detector has triggered.

The user can use the object "Read triggered detector list" and "Text, triggered detector" to display in plain text the name of the detectors currently triggered.

This parameter is visible if the 14-byte text messages have been enabled ("Function" parameter window).

3.2.3.4 "01-02" to "63-64" parameter windows

These parameter windows are visible if enabled in the "Detector Inputs" parameter window. The function of two detector objects is defined in each window. All detector inputs have the same functionality.

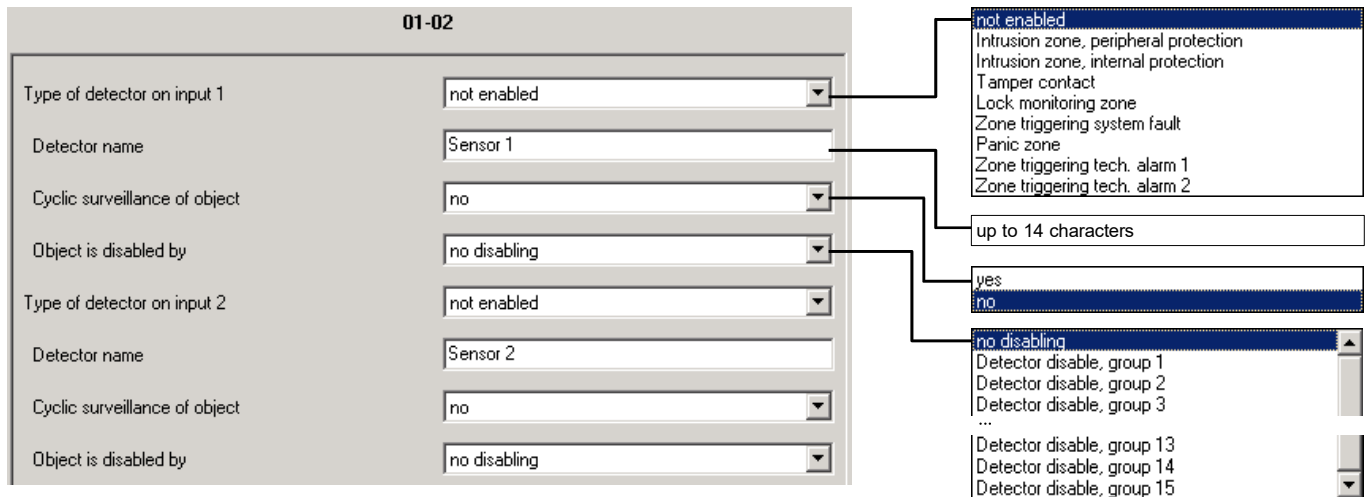


Fig. 17: "01-02" parameter window (Slave mode)

Type of detector at input ...

This parameter specifies the type of detector in the object "Detector input...".

The detector is assigned to one of the collective messages depending on this setting.

Detector name

Specify here the name of the detector. This name is entered in the event list memory, e.g., if this detector triggers an alarm. If the detector name is blank (only spaces), nothing is sent.

Monitor object cyclically

Cyclical monitoring of the "Detector input ..." object can be enabled here.

With cyclical monitoring, the object expects a telegram at regular intervals. The failure to receive a telegram for the duration of the monitoring time is equivalent to the detector triggering. The monitoring time is set in the "Detector Inputs" parameter window.

The parameter is visible if the value "no" is set in the "Receives collect. mess. from a slave" parameter.

Object switched off by

Set here which "Disable object" can disable the detector input. A disabled detector input is never triggered. If "no disabling" is set here, the detector cannot be disabled.

3.3 Group Objects

3.3.1 Objects for the "Master" operating mode

Objects for the event list memory and for the indication of triggered detectors

No.	Function	Object name	Data type	Flags
0	Request date/time	Event log	1 bit (EIS1) DPT 1.002	C, T
The Security Module can use this object to request the current date and time from a master clock after bus voltage recovery. For this purpose, the model sends the object value "1". This action is necessary if the master clock does not send the values automatically. The object is enabled by the parameter "Updating internal time and date after bus voltage recovery" ("Function" parameter window).				
1	Input time	Event log	3 bytes (EIS3) DPT 10.001	C, W, U
This object provides the device with the current time via a central clock. The time is required for the event list memory. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
2	Input date	Event log	3 bytes (EIS4) DPT 11.001	C, W, U
This object provides the device with the current date via a central clock. The date is required for the event list memory. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
3	Open event list memory	Event log	1 bit (EIS1) DPT 1.010	C, W
This object is used to display the most recent entry in the event list memory via the objects "Text, message", "Text, detector name" and "Text, date/time". 0 : Close event list memory The text indication is deleted (overwritten with spaces) 1 : Open event list memory The latest event is indicated on the text display. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
4	Read up/down	Event log	1 bit (EIS1) DPT 1.008	C, W
This object can be used to scroll through the event list memory. Text is indicated via the objects "Text, message", "Text, detector name" and "Text, date/time". 0 : Read previous (earlier) entry in the event list 1 : Read next (older) entry in the event list When the oldest entry is reached, the indication jumps back to the most recent entry (and vice versa). The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
5	Text, message	Event log	14 bytes (EIS15) DPT 16.000	C, R, T
1st part of an entry in the event list memory. It contains the type of event, e.g. the name of the alarm (as configured in the parameters). Character format: ASCII. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				

No.	Function	Object name	Data type	Flags
6	Text, detector name	Event log	14 bytes (EIS15) DPT 16.000	C, R, T
2nd part of an entry in the event list memory. As a rule, it contains the name of the detector affected (as configured in the parameters). If the event was not triggered by a detector, the object sends spaces. Character format: ASCII. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
7	Text, date/time	Event log	14 bytes (EIS15) DPT 16.000	C, R, T
3rd part of an entry in the event list memory. It contains the date and time when the event occurred. The date format can be configured in the parameters. Character set: ASCII. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
8	Read triggered detector list	Detector monitoring	1 bit (EIS1) DPT 1.008	C, W
Requests a further text entry from the list of triggered detectors. The text is sent by the object "Text, triggered detector". The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				
9	Text, triggered detector	Detector monitoring	14 bytes (EIS15) DPT 16.000	C, R, T
Sends on the bus the name of a detector that has just triggered and is thus preventing setting. The object value is requested by the object "Read triggered detector list". If several detectors have triggered, the object always sends the next entry from the list. If no detector has triggered, the text from the parameter "Object value "Text triggered detect." if no detector has triggered" ("Detector inputs" parameter window) is indicated. Character format: ASCII. The object is visible if sending "System state and alarms as text messages" is enabled ("Function" parameter window).				

Objects for setting/unsetting

No.	Function	Object name	Data type	Flags
10	Internal set/unset	Setting	1 bit (EIS1) DPT 1.001	C, W, T
Used for internal setting/unsetting (only peripheral detectors are activated). 0 : "Unset" request 1 : "Set" request If the device is not ready for setting, this object sends the value "0" back on the bus after receiving a "1". Possible causes could be: - A detector has triggered - An alarm has not been reset A technical alarm does not prevent setting!				
11	External set/unset	Setting	1 bit (EIS1) DPT 1.001	C, W, T
Used for external setting/unsetting (internal and peripheral detectors are activated). 0 : "Unset" request 1 : "Set" request If the device is not ready for setting, this object sends the value "0" back on the bus after receiving a "1". Possible causes could be: - A detector has triggered - An alarm has not been reset A technical alarm does not prevent setting!				

No.	Function	Object name	Data type	Flags
12	External set/unset delayed	Setting	1 bit (EIS1) DPT 1.001	C, W
Used to request delayed setting/unsetting Function for setting: 0 : Cancel delayed setting (end delay time) 1 : Request delayed setting (start delay time) Function for unsetting: 0 : Unset immediately 1 : No reaction				
13	Delay time active	Setting	1 bit (EIS1) DPT 1.002	C, T
Indicates that the delay time is active. 0 : Delay time is not active 1 : Delay time is active The parameter is only visible for delayed setting/unsetting.				
14	Enable setting	Setting	1 bit (EIS1) DPT 1.003	C, W
Used to enable and block setting. 0 : Block setting 1 : Enable setting By default the object has the value "1". Application: e.g. for creating subordinate setting areas: only if one Security Module is set can the next one be set.				
15	Status Externally set	Setting	1 bit (EIS1) DPT 1.002	C, T, R
0 : The device is not set externally 1 : The device is set externally (internal and peripheral detectors)				
16	Status Internally set	Setting	1 bit (EIS1) DPT 1.002	C, T, R
0 : The device is not set internally 1 : The device is set internally (only peripheral detectors)				
17	Status Ext. or int. set	Setting	1 bit (EIS1) DPT 1.002	C, T, R
0 : The device is unset 1 : The device is set internally or externally				
18	Status Ready for ext. setting	Setting	1 bit (EIS1) DPT 1.002	C, T, R
0 : The device is not ready for external setting (e.g. set externally/internally or detector triggered) 1 : The device is ready for external setting				
19	Status Ready delayed setting	Setting	1 bit (EIS1) DPT 1.002	C, T, R
0 : The device is not ready for delayed setting 1 : The device is ready for delayed setting				
20	Status Ready for int. setting	Setting	1 bit (EIS1) DPT 1.002	C, T, R
0 : The device is not ready for internal setting 1 : The device is ready for internal setting				
21	Setting confirmation	Setting	1 bit (EIS1) DPT 1.002	C, T
Sends telegram value "1" after external setting and "0" again after approx. 3 seconds. This information can be used, e.g., to activate an LED or a buzzer to signal to the user that the system has been successfully set.				

No.	Function	Object name	Data type	Flags
22	Error during setting	Setting	1 bit (EIS1) DPT 1.002	C, T
For signaling an error while operating the setting/unsetting device ("negative confirmation"). The object sends a "1" and after approx. 3 seconds a "0". With delayed setting, the object is sent with the value "1" if setting is not possible after the delay time has elapsed (e.g. door has not been locked). During normal setting, the object is sent with the value "1" if a setting attempt fails (e.g. because a window is still open).				
23	Text, setting status	Setting	14 bytes (EIS15) DPT 16.000	C, T, R
Sends parameterizable plain text about the current setting state.				

Objects for alarming

No.	Function	Object name	Data type	Flags
24	Ext. sig. dev., strobe light	Alarming	1 bit (EIS1) DPT 1.001	C, T, R
Used to control an external strobe light 0 : Strobe light is off 1 : Strobe light is on				
25	Ext. sig. dev., siren	Alarming	1 bit (EIS1) DPT 1.001	C, T, R
Used to control an external siren 0 : Siren is off 1 : Siren is on In contrast to the strobe light, the siren is always time-limited. The duration is parameterizable.				
26	Internal signaling device	Alarming	1 bit (EIS1) DPT 1.001	C, T, R
Used to control an internal signaling device (e.g. siren or horn) 0 : Internal signaling device is off 1 : Internal signaling device is on				
27	Telegr. Intrusion alarm	Alarming	1 bit (EIS1) DPT 1.002	C, T, R
Indicates an intrusion alarm. If an intrusion alarm occurs, the object is assigned the value "1". After a reset, the object value is reset to "0".				
28 29	Telegr. Technical alarm 1 Telegr. Technical alarm 2	Alarming	1 bit (EIS1) DPT 1.002	C, T, R
Indicates a technical alarm. If a technical alarm occurs, the object is assigned the value "1". After a reset, the object value is reset to "0".				
30	Telegr. Panic alarm	Alarming	1 bit (EIS1) DPT 1.002	C, T, R
Indicates a panic alarm. If a panic alarm occurs, the object is assigned the value "1". After a reset, the object value is reset to "0".				
31	Telegr. Tamper alarm	Alarming	1 bit (EIS1) DPT 1.002	C, T, R
Indicates a tamper alarm. If a tamper alarm occurs, the object is assigned the value "1". After a reset, the object value is reset to "0".				

No.	Function	Object name	Data type	Flags
32	Telegr. Fault	Alarming	1 bit (EIS1) DPT 1.002	C, T, R
Indicates a fault. If a fault occurs, the object is assigned the value "1". - The fault was caused by a bus voltage failure: after a reset, the object value is reset to "0". - The fault was triggered by a detector of the type <i>Fault detector</i>: the object value is reset to "0" once the detector object has been reset to "0", i.e. the cause of the fault has been rectified.				
33	Text, alarm type	Alarming	14 bytes (EIS15) DPT 16.000	C, T, R
Sends parameterizable plain text about the type of alarm (e.g. "Intrusion") if an alarm occurs. If several types of alarm are present at the same time, this object sends all alarm types continuously one after the other at intervals of approx. 3 seconds.				
34	Text, alarming detector	Alarming	14 bytes (EIS15) DPT 16.000	C, T, R
Sends parameterizable plain text with the name of the detector that triggered the alarm if an alarm occurs.				
35	Reset	Alarming	1 bit (EIS1) DPT 1.001	C, W
Used to reset an alarm or fault (telegram value "1"). Resetting is only possible in the unset state.				
36	Tamper reset	Alarming	1 bit (EIS1) DPT 1.001	C, W
Used to reset a tamper alarm. Resetting is only possible in the unset state. If this object is not enabled, a tamper alarm is reset via the "Reset" object.				
37	Status Reset	Alarming	1 bit (EIS1) DPT 1.002	C, W
This object indicates that the device is currently undertaking a reset. During the reset it has the value "1", otherwise "0". A reset takes approx. one second.				

Objects for the Telephone Gateway

No.	Function	Object name	Data type	Flags
38	Telegr. Intrusion alarm	Telephone Gateway	1 bit (EIS1) DPT 1.002	C, T, R
Signals an intrusion alarm to the Telephone Gateway. 0 : No alarm 1 : Alarm				
39 40	Telegr. Technical alarm 1 Telegr. Technical alarm 2	Telephone Gateway	1 bit (EIS1) DPT 1.002	C, T, R
Signals a technical alarm to the Telephone Gateway. 0 : No alarm 1 : Alarm				
41	Telegr. Panic alarm	Telephone Gateway	1 bit (EIS1) DPT 1.002	C, T, R
Signals a panic alarm to the Telephone Gateway. 0 : No alarm 1 : Alarm				
42	Telegr. Tamper alarm	Telephone Gateway	1 bit (EIS1) DPT 1.002	C, T, R
Signals a tamper alarm to the Telephone Gateway. 0 : No alarm 1 : Alarm				

No.	Function	Object name	Data type	Flags
43	Telegr. Fault	Telephone Gateway	1 bit (EIS1) DPT 1.002	C, T, R
Signals a fault to the Telephone Gateway. 0 : No alarm 1 : Alarm				

Objects for detector monitoring

No.	Function	Object name	Data type	Flags
44	Input telegram	Detector input 1	1 bit (EIS1) DPT 1.005	C, W
...	...	...		
107	Input telegram	Detector input 64		
Detector inputs 0 = Detector OK 1 = Detector has triggered The object is only to be linked to one group address.				
108	Disable object 1	Detector monitoring	1 bit (EIS1) DPT 1.001	C, W
...	...			
122	Disable object 15			
Can be used to disable detectors. A detector can be assigned to any disable object in the parameters. 0 = Detector is not disabled (normal function) 1 = Detector is disabled and behaves as if it is always OK.				
123	Status Detector disabled	Detector monitoring	1 bit (EIS1) DPT 1.002	C, R, T
Used to indicate that detectors are disabled. 0 = All disable objects have the value "0" 1 = At least one disable object has the value "1"				
124	Report list entry	Event list memory slave 1	1 byte DPT 5.010	C, W
...		...		
131		Event list memory slave 8		
This object is used if a master is working together with one or more slaves. Via the object, the master receives information from the slave that the slave has saved an event in the event list memory. The object value contains the address (0...249) of the entry in the event list memory.				
132	Read list entry	Event list memory slave 1	1 byte DPT 5.010	C, T
...		...		
139		Event list memory slave 8		
This object is used if a master is working together with one or more slaves. Used to trigger the slave to send an entry in the event list memory on the bus. The object value contains the address (0...249) of the entry in the event list memory.				
140	Telegr. Life signal	General	1 bit (EIS1) DPT 1.001	C, R, T
This object is sent cyclically on the bus to signal sign of life. It also indicates whether the device has a fault. 0 : No fault 1 : Device has a fault				

No.	Function	Object name	Data type	Flags
141	Switch on/off	Buzzer	1 bit (EIS1) DPT 1.001	C, R, W
Controls the device's internal buzzer. 0 : Buzzer is off 1 : Buzzer is on				
142	Switch	Relay output	1 bit (EIS1) DPT 1.001	C, W, T
Used to control the relay; can be inverted via parameters. NO contact (normal operation): 0: Contact is open 1: Contact is closed NC contact (inverted operation): 0: Contact is closed 1: Contact is open				
143	Scene	General	1 byte DPT 18.001	C, T
Sends a scene number on the bus during setting/unsetting and alarming, e.g. to control lighting.				
144	Status byte	General	1 byte non DPT	C, R
This object is particularly useful if the device is not working as required. It indicates the possible cause: Bit 0: Externally set Bit 1: Internally set Bit 2: External alarm Bit 3: Internal alarm Bit 4: External not ready for setting Bit 5: Internal not ready for setting Bit 6: Delayed not ready for setting Bit 7: Detector disabled The object value is not sent actively on the bus.				

3.3.2 Objects for the "Slave" operating mode

You will find examples of the object assignments between master and slave in section 4.2.2.

Objects for the event list memory and for the indication of triggered detectors

No.	Function	Object name	Data type	Flags
0	Request date/time	Event log	1 bit (EIS1) DPT 1.002	C, T
The Security Module can use this object to request the current date and time from a master clock after bus voltage recovery. For this purpose, the model sends the object value "1". This action is necessary if the master clock does not send this information automatically. The object is enabled by the parameter "Updating internal time and date after bus voltage recovery" ("Function" parameter window). Assign this object the same group address as the master.				
1	Input telegram	Event list memory time	3 bytes (EIS3) DPT 10.001	C, W, U
This object provides the device with the current time and date via a central clock. The object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Assign this object the same group address as the master.				
2	Input telegram	Event list memory date	3 bytes (EIS4) DPT 11.001	C, W, U
This object provides the device with the current date via a central clock. It is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Assign this object the same group address as the master.				
3	Open event list memory	Event log	1 bit (EIS1) DPT 1.010	C, W
This object is used to display the most recent entry in the event list memory via the objects "Text, message", "Text, detector name" and "Text, date/time". 0: Close event list memory The text indication is deleted (overwritten with spaces) 1: Open event list memory The latest event is indicated on the text display. The object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Normally, this object does not need to be used because the reading of the event list memory is controlled by the master. If used, it only displays the events from the slave device.				
4	Read up/down	Event log	1 bit (EIS1) DPT 1.008	C, W
This object can be used to scroll through the event list memory. Text is indicated via the objects "Text, message", "Text, detector name" and "Text, date/time". 0: Read previous (earlier) entry in the event list 1: Read next (older) entry in the event list When the oldest entry is reached, the indication jumps back to the most recent entry (and vice versa). The object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Normally, this object does not need to be used because the reading of the event list memory is controlled by the master. If used, it only displays the events from the slave device.				

No.	Function	Object name	Data type	Flags
5	Text, message	Event log	14 bytes (EIS15) DPT 16.000	C, R, T
1st part of an entry in the event list memory. It contains the type of event, e.g. the name of the alarm (as configured in the parameters). Character format: ASCII. The object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Assign this object the same group address as the master.				
6	Text, detector name	Event log	14 bytes (EIS15) DPT 16.000	C, R, T
2nd part of an entry in the event list memory. As a rule, it contains the name of the detector affected (as configured in the parameters). If the event was not triggered by a detector, the object sends spaces. Character format: ASCII. The object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Assign this object the same group address as the master.				
7	Text, date/time	Event log	14 bytes (EIS15) DPT 16.000	C, R, T
3rd part of an entry in the event list memory. It contains the date and time when the event occurred. The date format can be configured in the parameters. Character format: ASCII. The object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function is enabled. Assign this object the same group address as the master.				
8	Read triggered detector list	Detector monitoring	1 bit (EIS1) DPT 1.008	C, W
Requests a further text entry from the list of triggered detectors. The text is sent by the object "Text, triggered detector". This object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function ("Function" parameter window) is enabled. The detectors triggered are indicated independently of the master and must be assigned their own group address.				
9	Text, triggered detector	Detector monitoring	14 bytes (EIS15) DPT 16.000	C, R, T
Sends on the bus the name of a detector that has just triggered and is thus preventing setting. The object value is requested by the object "Read triggered detector list". If several detectors have triggered, the object always sends the next entry from the list. If no detector has triggered, the text from the parameter "Object value "Text triggered detect." if no detector has triggered" ("Detector inputs" parameter window) is indicated. Character format: ASCII. This object is visible if the "Send the system state and alarms as text messages (14-byte objects)" function ("Function" parameter window) is enabled. The detectors triggered are indicated independently of the master and must be assigned their own group address.				

Objects for the "collective message"

No.	Function	Object name	Data type	Flags
14	Intrusion (peripheral protection)	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Intrusion detector (peripheral protection)" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered				

No.	Function	Object name	Data type	Flags
15	Intrusion (internal protection)	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Intrusion detector (internal protection)" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered.				
16	Tamper	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Tamper detector" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered				
17	Lock monitoring	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Locking detector" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered.				
18	Fault	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Fault detector" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered				
19	Panic	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Panic detector" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered				
20	Technical alarm 1	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Tech. detector 1" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered				
21	Technical alarm 2	Collective message slave	1 bit (EIS1) DPT 1.005	C, R, T
This object combines all detectors of the type "Tech. detector 2" and forwards the information to the master. 0: All detectors OK 1: One detector has triggered				

Status objects for communication with the master:

The following objects must be linked to the corresponding object for the master via a group address:

No.	Function	Object name	Data type	Flags
10	Internally set	Status master	1 bit (EIS1) DPT 1.002	C, W
The device uses this object to find out from the master whether the master is internally set. In this situation, alarms for all peripheral detectors are saved. Link to the object "Status Internally set" for the master.				

No.	Function	Object name	Data type	Flags
11	Externally set	Status master	1 bit (EIS1) DPT 1.002	C, W
The device uses this object to find out from the master whether the master is externally set. In this situation, alarms for all intrusion detectors are saved. Link to the object "Status Externally set" for the master.				
13	Delay time active	Status master	1 bit (EIS1) DPT 1.002	C, W
The device uses this object to find out from the master whether the master's delay time is active. The information is only relevant for delayed setting. Link to the object "Delay time active" for the master.				
25	Intrusion alarm	Status master	1 bit (EIS1) DPT 1.002	C, W
The master uses this object to inform the slave that an intrusion alarm has been triggered. This means that no further intrusion messages are saved in the event list memory until the alarm is reset. Link to the object "Telegr. Intrusion alarm" for the master.				
26	Technical alarm 1	Status master	1 bit (EIS1) DPT 1.002	C, W
The master uses this object to inform the slave that an intrusion alarm has been triggered. This object prevents the saving of another technical alarm 1 event in the event list memory until the alarm has been reset. Link to the object "Telegr. Technical alarm 1" for the master.				
27	Technical alarm 2	Status master	1 bit (EIS1) DPT 1.002	C, W
The master uses this object to inform the slave that an intrusion alarm has been triggered. This object prevents the saving of another technical alarm 2 event in the event list memory until the alarm has been reset. Link to the object "Telegr. Technical alarm 2" for the master.				
28	Panic alarm	Status master	1 bit (EIS1) DPT 1.002	C, W
The master uses this object to inform the slave that an intrusion alarm has been triggered. This means that no further panic events are saved in the event list memory until the alarm is reset. Link to the object "Telegr. Panic alarm" for the master.				
29	Tamper alarm	Status master	1 bit (EIS1) DPT 1.002	C, W
The master uses this object to inform the slave that an intrusion alarm has been triggered. This means that no further tamper events are saved in the event list memory until the alarm is reset. Link to the object "Telegr. Tamper alarm" for the master.				
30	Fault	Status master	1 bit (EIS1) DPT 1.002	C, W
The master uses this object to inform the slave that an intrusion alarm has been triggered. This means that no further fault events are stored in the event list memory until the alarm is reset. Link to the object "Telegr. Fault" for the master.				

Objects for "alarming"

33	Text, alarm type	Alarming	14 bytes (EIS15) DPT 16.000	C, T, R
Sends parameterizable plain text about the type of alarm if an alarm occurs. Assign this object the same group address as the master.				

34	Text, alarming detector	Alarming	14 bytes (EIS15) DPT 16.000	C, T, R
Sends parameterizable plain text with the name of the detector that triggered the alarm if an alarm occurs. Assign this object the same group address as the master.				
35	Reset	Alarming	1 bit (EIS1) DPT 1.002	C, W
Receives information from the master that a reset is to be undertaken. Used to reset an alarm (telegram value "1") if a fault occurs. The object is visible if the parameter "Fault after bus voltage recovery" = yes. Link to the object "Status Reset" for the master.				

Objects for "detector monitoring"

No.	Function	Object name	Data type	Flags
44 ... 107	Input telegram ... Input telegram	Detector input 1 ... Detector input 64	1 bit (EIS1) DPT 1.005	C, W
Detector inputs: 0: Detector OK 1: Detector has triggered The object is only to be linked to one group address.				
108 ... 122	Disable object 1 ... Disable object 15	Detector monitoring	1 bit (EIS1) DPT 1.001	C, W
Can be used to disable detectors. A detector can be assigned to any disable object in the parameters. 0: Detector is not disabled (normal function) 1: Detector is disabled and behaves as if it is always OK.				
123	Status Detector disabled	Detector monitoring	1 bit (EIS1) DPT 1.002	C, R, T
This object indicates whether a detector input has been disabled ("1") or whether all detector inputs are enabled ("0").				
124	Report list entry	Event list memory slave	1 byte DPT 5.010	C, T
Via this object, the slave sends information to the master that the slave has saved an event in the event list memory. The object value contains the address (0...249) of the entry in the event list memory.				
125	Read list entry	Event list memory slave	1 byte DPT 5.010	C, W
Used to trigger the slave to send an entry in the event list memory on the bus. The object value contains the address (0...249) of the entry in the event list memory.				
140	Telegr. Life signal	General	1 bit (EIS1) DPT 1.001	C, R, T
This object is sent cyclically on the bus to signal sign of life. It also indicates whether the device has a fault. 0: No fault 1: Device has a fault The object can be assigned to a detector input on the master (e.g. of the type "Fault detector") via a group address. For more details, see section 4.2.2.				
141	Switch on/off	Buzzer	1 bit (EIS1) DPT 1.001	C, R, W
Controls the device's internal buzzer. 0: Buzzer is off 1: Buzzer is on				

No.	Function	Object name	Data type	Flags
142	Switch	Relay output	1 bit (EIS1) DPT 1.001	C, R, W
Used to control the relay; can be inverted via parameters. NO contact (normal operation): 0: Contact is open 1: Contact is closed NC contact (inverted operation): 0: Contact is closed 1: Contact is open				

4 Application and planning

4.1 Important notes

Care must be taken while planning, installing and commissioning systems for messaging and alarming. False alarms in particular must be prevented to avoid consequential damage.

Please pay attention to the notes in section 5.2.

4.2 The operating modes

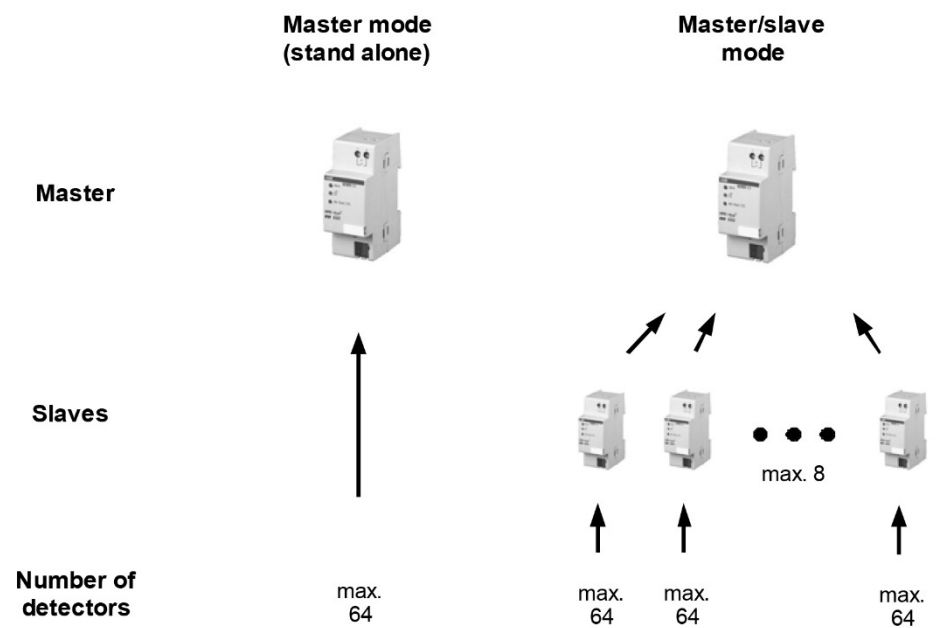


Fig. 18: The "Master" and "Slave" operating modes

The operating modes are described in more detail below.

4.2.1 Master mode

The "Master" operating mode is the default operating mode. Here the Security Module operates alone and controls all security functions. The master can monitor up to 64 detectors.

4.2.2 Master-Slave mode

If the 64 detector inputs on the master are insufficient, up to eight more Security Modules ("slaves") can be added. The operating principle is explained first in this section. Examples are then used to describe how to link the group addresses.

The slave is responsible for grouping detectors, while the master controls alarming and setting/unsetting. The following figure provides an overview:

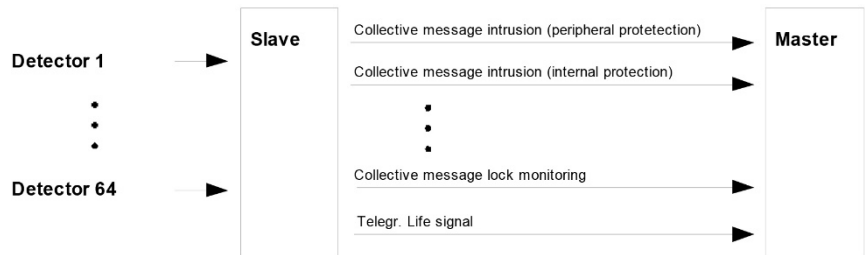


Fig. 19: Combining the detector inputs into collective messages

In the slave, all detector inputs of the same type are combined into a collective message. This action corresponds to a logical OR: if a detector has triggered, the collective message is also triggered.

In the slave mode, eight different detector types can be set in the Security Module:

- Intrusion detector (peripheral protection)
- Intrusion detector (internal protection)
- Tamper detector
- Locking detector
- Fault detector
- Panic detector
- Tech. detector 1
- Tech. detector 2

By combining all detectors of the same type into a collective message that is forwarded to the master Security Module, one detector input on the master is used.

Example: All detectors of type "Intrusion detector (peripheral protection)" are combined in the slave and appropriately forwarded to a master detector input of the type "Intrusion detector (peripheral protection)". For an improved overview, the message text parameter in the parameter window "01-02" to "63-64" for the master should be configured as follows:
Collec.mess.-intr.periph.prot. (for collective message "Intrusion (peripheral protection)").

A detector input on the master can only be used once, i.e. only 63 of the total of 64 detector outputs are then freely available. Depending on the number of slave collective messages, the remaining zones on the master can then be assigned as required (e.g. using local detectors).

Example: A slave combines all detectors of the type "Intrusion detector (peripheral protection)". If one of these detectors has the value "1", the collective message "Intrusion (peripheral protection)" forwards this information to a detector input on the master. The detector input on the master must be parameterized for a slave message of the type "Intrusion detector (peripheral protection)".

Settings on the master

If the detector object on the master is used to receive a slave message, the parameter *Receives collect. mess. from a slave* must be set to yes.

Assignment of the group addresses

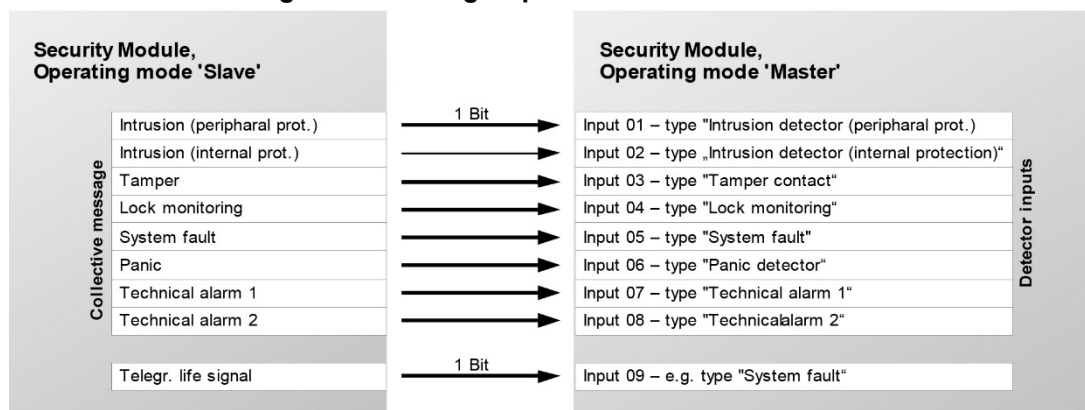


Fig. 20: Assignment of the group addresses from the slave to the master (example)

The figure above shows the communication from the slave to the master. The objects are linked to each other via group addresses. If a slave does not use one or more detector types at all, the collective message does not need to be assigned.

The "life signal" can be sent cyclically by the slave and monitored cyclically by the master. If the telegram is not received (e.g. the slave is removed from the bus), a fault would be triggered in the above example – alternatively, another type of alarm is also possible.

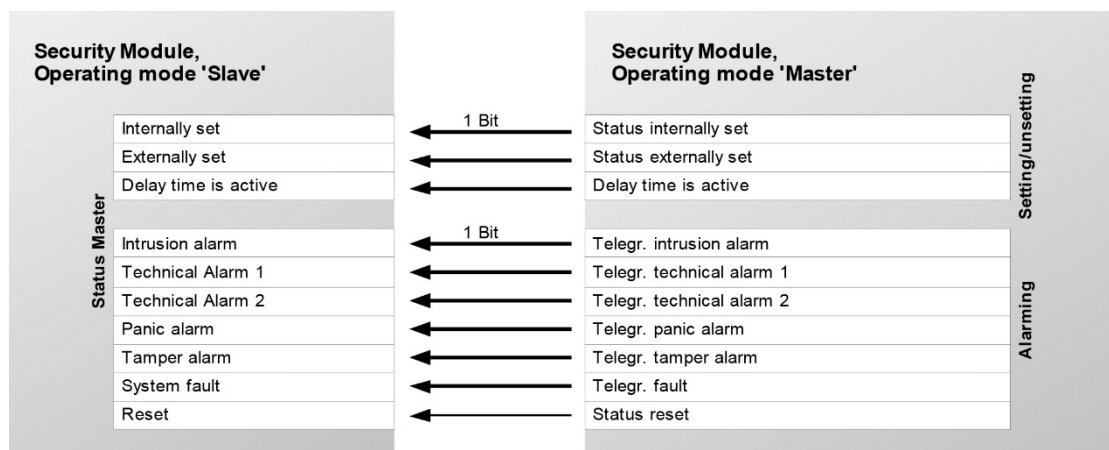


Fig. 21: Assignment of the objects from the master to the slave

As can be seen above, the master sends its setting and alarm state to the slave. This informs the slave which events are to be saved in its event list memory.

The objects are linked to each other via group addresses. If an object is not visible, it does not need to be linked.

If there are several slaves, the master sends the objects to all slaves at the same time – they are therefore linked to the same group address.

The "Reset" object is used if the Security Module switches to fault after bus voltage recovery. In this situation, it can be reset by the master.

Reading the event list memory

This section describes how to read the event list memory in the Master-Slave mode. The objects are assigned between the master and slave as follows:

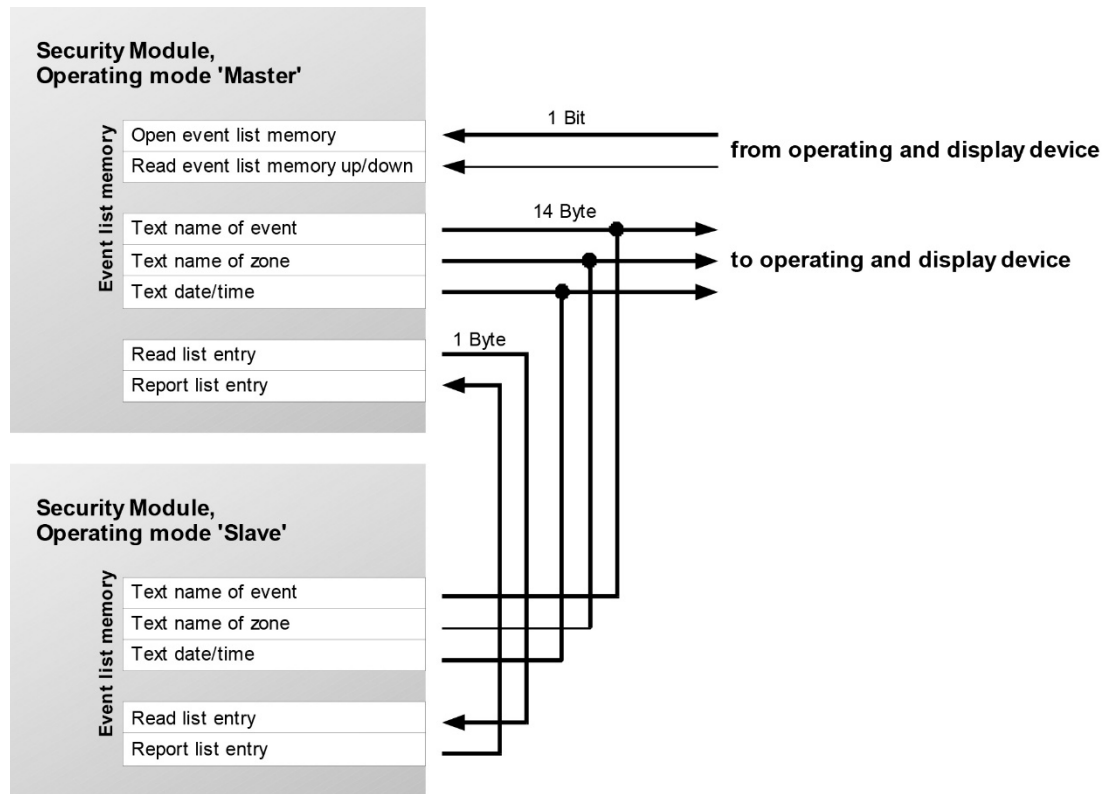


Fig. 22: Assignment of the objects for reading the event list memory

The user can read the event list memory using the objects *Open event list memory* and *Read event list memory up/down*.

The three "Text..." objects send data to the same group address for both master and slave.

The objects *Read list entry* and *Report list entry* are each linked to a dedicated group address. As a total of 8 slaves are possible per master, the master has 8 object pairs *Read list entry* and *Report list entry*. Each object between the master and slave is to be connected to a dedicated group address.

Time and date for the event list memory

For entering the timestamp in the event list memory, the Security Module requires the time and date at regular intervals (e.g. 1x a day).

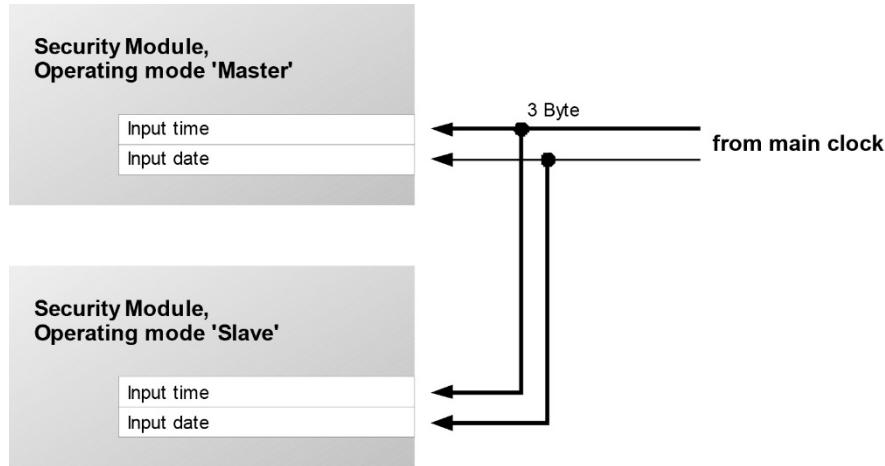


Fig. 23: Assignment of the objects *Input time* and *Input date*

Simply link the *Input time* and *Input date* for all Security Modules to the group address.

Principle of operation of the event list memory in the Master-Slave mode

In principle, all events are saved in the device in which they were first acquired. In the Master-Slave mode, as a rule this is the slave because the event from a detector arrives here first.

The slave uses the object *Report list entry* to notify the master that an entry has been saved in the event list memory. To read the event list memory, the master queries the entry via the object *Read list entry*.

The following example explains the procedure:

1. The alarm system is set. Slave no. 2 receives an event on a detector input of the type "Intrusion detector (peripheral protection)".
2. The slave saves the event in its event list memory in list entry no. 20.
Contents:
"Intrusion alarm" – "Living room" – "05/31/04 14:30"
3. The slave sends the value "1" to the master via the object *Collective message of slave*. The master triggers an intrusion alarm. The slave then sends the value "20" to the master via the object *Report list entry*, indicating that an event has been saved.
4. The following event is stored in the event list memory in the master:
"Slave #2" – "Address 20"

The procedure for reading the event list memory is as follows:

1. The master receives a request from the display to send an event list memory entry (via object *Event log - Read up/down*).
2. The event list memory contains the above event, which tells the master that the event from "Slave #2" has been saved in "Address 20". The master then sends the object *Read list entry* with the value 20 to the slave.

3. Slave no. 2 receives the object *Read list entry* and sends the following objects on the bus:
- Object "Text, message" = "Intrusion alarm"
 - Object "Text, detector name" = "Living room"
 - Object "Text, date/time" = "05/31/04" "14:30"

List of triggered detectors

An important convenience function is the list of detectors that are currently preventing setting. The user can scroll through this list, e.g., if the setting/unsetting device refuses to set the alarm.

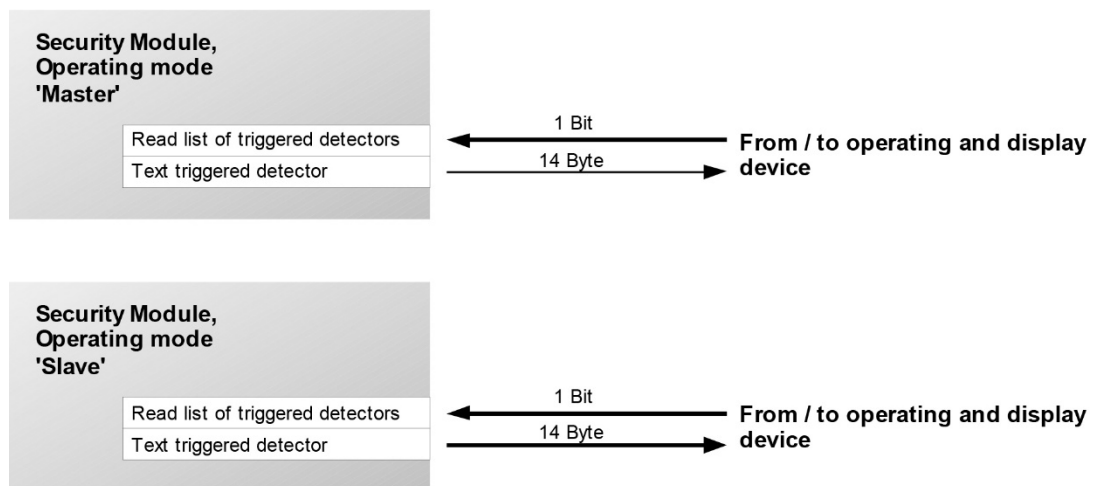


Fig. 24: Assignment of objects to the indication of the triggered detectors

The master and the slave are read separately. There is no coupling via group addresses.

Texts about alarming

The texts about alarming *Text, alarm type* and *Text, triggered detector* inform the user about which alarm (e.g. intrusion alarm) has been generated by which detector.

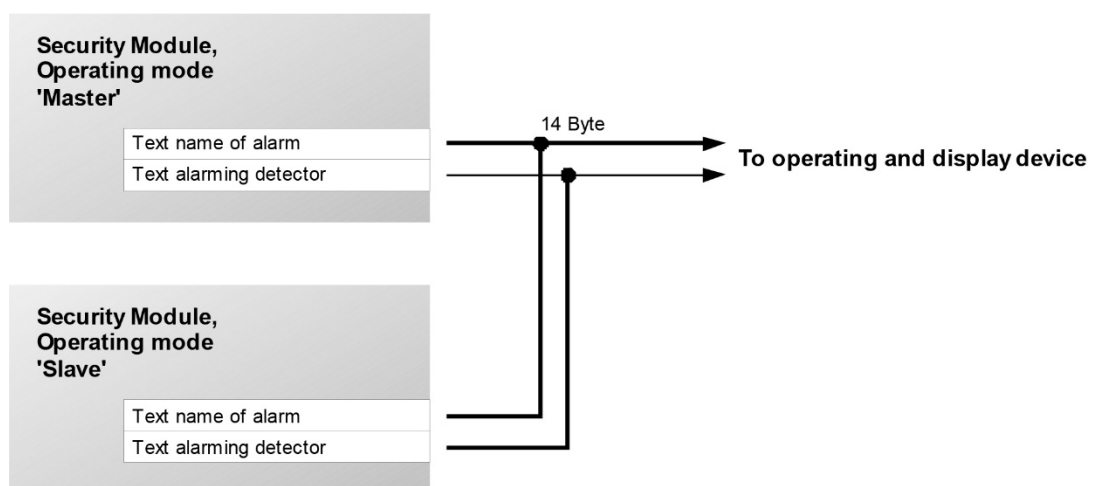


Fig. 25: Assignment of objects for the indication of texts about alarming

In the Master-Slave mode, the objects in the master and slave are each assigned to the same group address.

4.3 Detector evaluation

The Security Module has 64 detector objects that it uses to monitor the state of the detectors. Each of the objects is assigned to a detector type, which determines whether and how an alarm is triggered if there is an event.

The following detector types are possible.

Detector type	Alarming
Intrusion detector: Peripheral protection	Triggers an intrusion alarm if the system is set internally or externally.
Intrusion detector: Internal protection	Only triggers an intrusion alarm if the system is set externally.
Intrusion detector: Peripheral protection, delayed	Detector that is disabled during the delay time for setting, e.g. door contact. Triggers an intrusion alarm after the alarm delay time has elapsed if the system is set internally or externally.
Intrusion detector: Internal protection, delayed	Detector that is disabled during the delay time for delayed setting, e.g. motion detector in the access area. Triggers an intrusion alarm after the alarm delay time has elapsed if the system is set externally.
Tamper detector	Triggers a tamper alarm irrespective of the setting state. Is used, e.g., to signal an attempt to tamper with the alarm system.
Locking detector	Generally does not trigger an alarm, but prevents setting, e.g. if the door has not been locked.
Fault detector	Triggers a fault message irrespective of the setting state. A fault prevents setting and is indicated by the flashing green LED on the device.
Panic detector	Triggers a panic message irrespective of the setting state.
Tech. detector 1 Tech. detector 2	Triggers a technical alarm (e.g. water detector, gas detector) irrespective of the setting state. If the system is unset or set internally, the internal signaling device (horn) is activated. If the system is set externally, the external signaling device is activated. A technical alarm does not prevent setting.

Table 1: Detector types

4.3.1 Integrating Zone Terminals

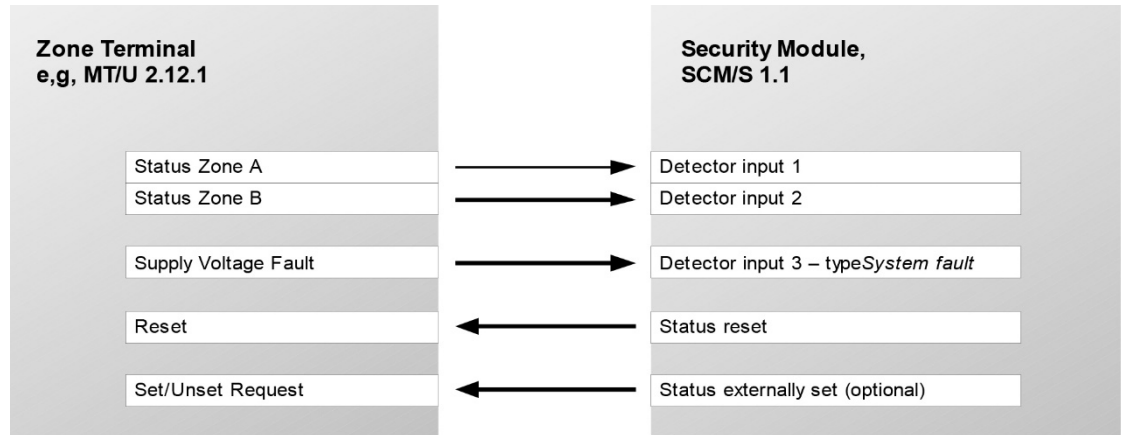


Fig. 26: Assignment of the group address to a Zone Terminal (example)

The figure above shows the communication between a Security Module and a Zone Terminal.

The object *Fault of supply voltage* sends a message to a detector object of type *Fault detector*. With the aid of the object *Fault of supply voltage*, the Zone Terminal can send a cyclical life signal to the Security Module. In this situation, *Fault of supply voltage* is to be sent cyclically and the detector input in the Security Module must be monitored cyclically. In this way a fault message is indicated to the user; this message must be confirmed by means of a reset.

The object *Status Reset* in the Security Module **must** be assigned to the object *Reset* in the Zone Terminal. In this manner, the Zone Terminal can be reset (e.g. after failure of the 12 V power supply).

The object *Status Externally set* is only to be assigned to the object *Setting/unsetting switch* if the Zone Terminal is to provide an alarm memory function. A message is then not reset to "0" if there is an alarm. This makes it possible to identify subsequently which detectors were triggered during an intrusion.

Note: A prerequisite for this function is that either only internal detectors or only peripheral detectors are connected to the Zone Terminal.

4.3.2 Disabling detectors

Detectors can be removed from the alarm system for convenience purposes. For example, windows can be opened for ventilation while the alarm system is set internally. A detector that is disabled cannot trigger an alarm and does not prevent setting.

Detectors can only be disabled if this function has been enabled in the parameterization. If a zone is disabled, this situation is indicated by the object *Status Detector disabled*.

15 disable objects

To make it possible to disable a detector input, it is assigned to one of the 15 *disable objects* in the parameters. If the disable object has the value "1", the detector input is deactivated.

Automatically enabling again

It is possible to configure in the parameters that all disabled detectors are enabled again the next time they are unset (see *Setting/unsetting* parameter window). This action prevents a zone from accidentally remaining permanently disabled.

4.4 Setting/unsetting

Setting/unsetting has a significant influence on the function and security of the alarm system. This function should be protected against unauthorized use.

4.4.1 External and internal setting



The Security Module distinguishes between internal and external setting. With *internal setting*, the user is inside the building and only the peripheral detectors trigger an intrusion alarm.

External setting is used when the user leaves the building. In this situation the internal and peripheral detectors are set.

With external setting, a distinction is made between "undelayed" and "delayed" setting (see section 4.4.2f.).

Assignment of the objects

In the following example, a (primitive) setting/unsetting device in the form of a button is used for setting/unsetting:

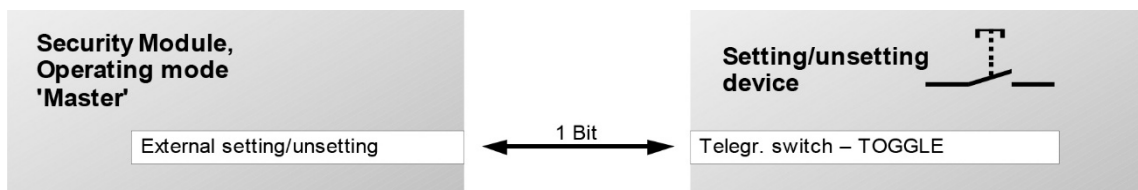


Fig. 27: Assignment of the objects for setting/unsetting (example)

Each time the button is pressed, the object "Telegr. Switching" object inverts its value ("TOGGLE" switch).

If the Security Module is not ready for setting, it sends back a "0" to the same group address. The Switching object in the setting/unsetting device is then reset to "0" and is again synchronized with the setting/unsetting state of the Security Module.

4.4.2 Normal setting (undelayed)

For "normal" setting, the setting/unsetting device is installed outside the security area (e.g. next to the access door).

If there are several accesses, several setting/unsetting devices can be used.

Sequence diagram for setting

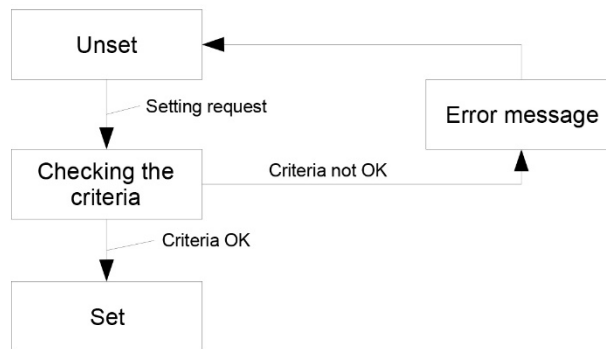


Fig. 28: Sequence for "normal" (undelayed) setting

1. The user sends a setting request via the object "External set/unset"
2. The setting request provokes a check on the setting criteria. If one of the following criteria applies, setting is canceled with an error message:
 - a detector has triggered (e.g. window open) *or*
 - the system has switched to fault *or*
 - the system has not yet been reset after an alarm
 If there is an error message, the object "Error during setting" is set to "1" for a parameterizable time. This object can be used to control, e.g., a buzzer.
 Note: A technical alarm does not prevent setting!
3. If the criteria are met, the system is set.

4.4.3 Delayed setting

With delayed setting, the setting/unsetting device is installed *within* the security area. The user triggers setting there and a delay time starts during which they can leave the building. Once the time has elapsed or the door is

locked, the system is finally set. During the delay time, all access detectors on the path between the setting/unsetting device and the door are unset.

Sequence diagram for setting

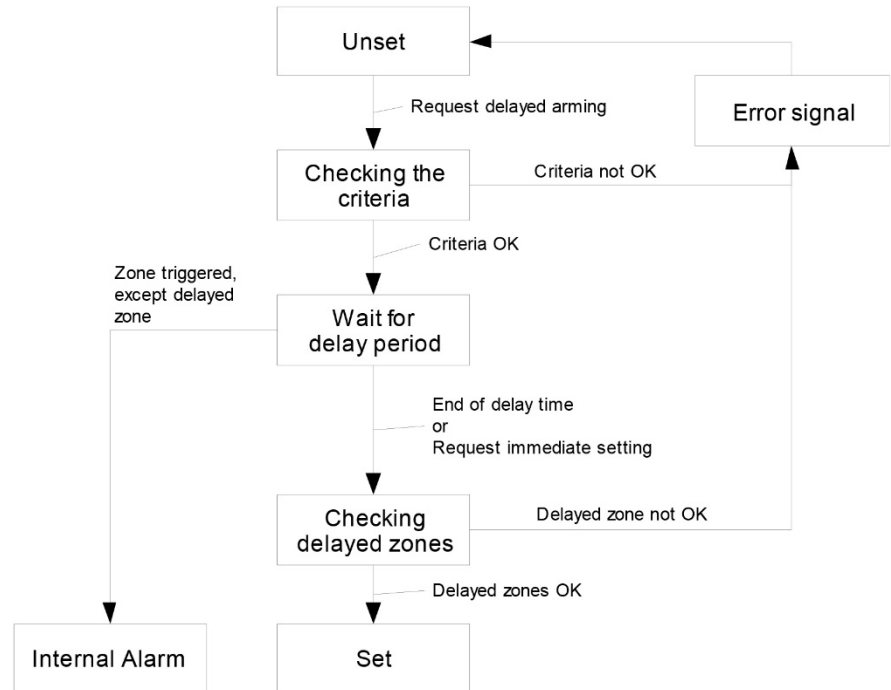


Fig. 29: Sequence for delayed setting

1. The user sends a setting request. The following setting criteria are checked. If
 - a detector has triggered (e.g. window open)
 - the system has switched to fault or
 - the system has not been reset after an alarm
 setting is canceled with an error message. An error message can be displayed to the user (object "Error during setting" set to "1" for a parameterizable time).
A technical alarm does not prevent setting!
2. The delay time is activated. All detectors, with the exception of the access detectors that monitor the path from the setting/unsetting device to the door, are set.
The user can be warned via the object "Delay time is active".
3. If an intrusion detector is triggered during the delay time, the setting process is canceled and an internal alarm is triggered.
4. Final setting takes place either after the delay time has elapsed or, if so parameterized, when the last open detector of the type "Intrusion detector (access, peripheral protection)" is closed. The access detectors are checked first. If one of these detectors is still triggered, this situation is signaled with an error message after the delay time has elapsed and the system is not set.

Sequence diagram for unsetting

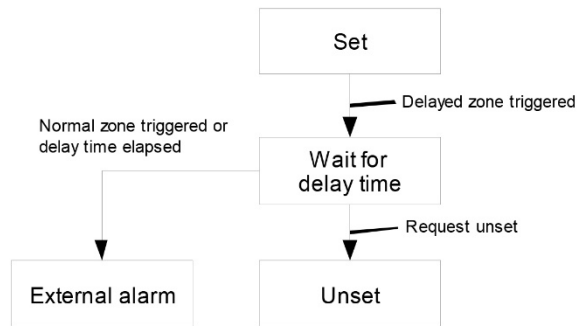


Fig. 30: Sequence for delayed unsetting

1. The user opens the door and triggers an access detector of the zone type *Intrusion detector: peripheral protection, delayed*. This action starts the delay time.
2. All access detectors are disabled during the delay time. If any other set detector is activated, an alarm is triggered.
3. The user can unset the alarm system until the delay time has elapsed. Otherwise, an intrusion alarm is triggered.

4.4.4 Layout of security areas

One security area can be managed per Security Module.

By logically linking several Security Modules, it is also possible to create sub-areas. A sub-area must be set before the main area can be set.

This function can be implemented by linking the object "Status Externally set" in the Security Module in the sub-area to the object "Enable setting" in the main area.

4.4.5 Further functions

If the alarm system is set internally, the user can unset it via the external setting/unsetting device (so-called "late home feature").

The object "Setting confirmation" can be used to indicate successful setting to the user. The object value is set to "1" for a parameterizable time and can control, e.g., a buzzer.

4.5 Alarming

Alarming notifies the user depending on the type of signal (detector type) and the setting/unsetting state.

4.5.1 Signaling devices

The following signaling devices are provided:

Signaling device	Explanation
External siren and strobe light	A signaling device combination that usually indicates an intrusion or an attempt at tampering if the system is set externally.
Internal siren	Indicates an alarm when the user is in the building, i.e. the system is set or unset internally.
Telephone Gateway (device for dialing)	Used for silent alarming (e.g. for a panic alarm) or for targeted remote signaling.
LCD display	The LCD display can signal an alarm or fault via a buzzer when the user is in the building. The device also indicates the alarm type and the detector in plain text.

Table 2: Possible signaling devices



Alarming via a signaling device

A signaling device is used to signal an alarm visually or acoustically. It can be controlled, e.g., via a Switch Actuator.

The signaling device is installed indoors as an internal signaling device or outdoors as an external signaling device. The external signaling device consists of a strobe light and a siren. The latter is activated by the Security Module always for a limited time.

Controlling a Telephone Gateway (telephone dialer)

An alarm can be forwarded to a telephone using a Telephone Gateway. The party called is informed of the type of alarm and can take appropriate action.

So that alarming via the Telephone Gateway is convenient and secure, the Security Module has a separate object for each alarm type.

4.5.2 Default settings

The type of alarming depends on the setting status and the type of detector that triggered the alarm. The following table provides an overview of the default settings that can be changed in the parameters.

Type of event	Setting/unsetting state	Internal signaling device	External signaling device	Telephone Gateway
Intrusion alarm	Internally set	Yes	No	No
	Externally set	No	Yes	Yes
Tamper alarm	Unset	Yes	No	No
	Internally set	Yes	No	No
	Externally set	No	Yes	Yes
Fault	Irrelevant	No	No	Yes
Panic alarm	Irrelevant	No	No	Yes
Technical alarm 1	Unset	Yes	No	No
	Internally set	Yes	No	No
	Externally set	No	No	Yes
Technical alarm 2	Unset	Yes	No	No
	Internally set	Yes	No	No
	Externally set	No	No	Yes

Table 3: Default settings for alarming

"External signaling device" refers to the objects "Ext. sig. dev., strobe light" and "Ext. sig. dev., siren".

4.5.3 Resetting alarms ("Reset")

Resetting an alarm by the user is referred to as a "Reset". The reset is requested via the object "Reset".

Note: The alarm system must be unset to reset an alarm. This feature prevents resetting by unauthorized people.

4.5.4 Faults

With a fault event, the Security Module indicates that something is wrong with the function of the alarm system. If there is a fault, the green LED on the device flashes and the object "Telegr. Fault" is set to "1".

A fault can be triggered either by a detector of the type "Fault detector" or by a bus voltage failure.

A fault that was triggered by a detector of the type "Fault detector" is deleted as soon as the detector input has the value "0" again.

If the fault event was caused by a bus voltage failure, a reset is required.

4.5.5 Subsequent alarms

If another alarm is triggered by a different detector type during an alarm (e.g. technical alarm), both alarms are displayed in parallel.

If an alarm is caused by one detector type, triggering another detector of the same type will cause the alarm to be repeated.

4.6 Saving events

The Security Module has an event list memory with 250 entries. If the number of events exceeds 250, the oldest event is overwritten by the new event. The event list memory can be enabled via the "Send the system state and alarms as text messages (14-byte objects)" parameter ("Function" parameter window).

The following objects are used to display an entry in the event list memory. The objects normally indicate the latest event:

Object	Explanation
Text, message	Contains the type of event
Text, detector name	Contains the name of the detector that triggered the event
Text, date/time	Contains the time and date of the event. The format is parameterizable.

Table 4: Contents of the event list memory

Use the object "Read event list memory up/down" to scroll through the contents of the event list memory. If a new event is then saved or the object "Open event list memory" receives the value "1", the event list memory objects display the latest event again.

If there is an alarm, only the event that triggered the alarm is saved. If, e.g., other intrusion detectors are triggered during an intrusion, these events are no longer saved.

The following events are saved in the event list memory:

Event	Object "Text, message"	Object "Text, detector name"
Alarm or fault	Name of the alarm (parameterizable)	Name of the detector (parameterizable)
Fault after bus voltage recovery	Name of the fault alarm (parameterizable)	"Power On"
Bus voltage failure	"Power Off"	(Spaces)
Reset via ETS	"Reset"	(Spaces)
Reset via object	"Alarm Reset"	(Spaces)
Setting	Event in the state "externally set" (parameterizable)	(Spaces)
Unsetting	Event in the state "unset" (parameterizable)	(Spaces)

Table 5: Overview of saved events

Note: A fault due to a bus voltage failure is saved in the event list memory (see above). Resetting this fault is not saved.

Clearing the event list memory

The event list memory is reset when the device is reprogrammed.

Updating time and date

The Security Module has an internal clock with an accuracy of <5 seconds per day. It is used exclusively for the timestamp in the event list memory.

The time and date must be set regularly by a master clock. It is recommended to synchronize the time daily at 3 a.m. because the Security Module does not switch between summer and winter time.

The time and date are reset after a bus voltage failure. The Security Module can actively query this information via the bus. There are two ways of querying these data:

1. The Security Module reads the "Time" and "Date" object values via the bus.
2. The Security Module sends a send request to the master clock via the object "Request date/time". This is necessary for some clocks (e.g. timers of type SW/S or FW/S).

4.7 Reaction during bus voltage failure and recovery

Important: If the bus voltage fails, the detectors are always out of operation. This means that monitoring is no longer possible!

The Security Module is designed so that it continues to operate stably after the voltage returns and does not generate any unwanted operating errors (e.g. false alarms).

Reaction during bus voltage failure

During bus voltage failure, the Security Module completely ceases to operate. The contents of the event list memory are retained.

Reaction after bus voltage recovery

When bus voltage recovery occurs, the device first waits for the duration of the initialization time until the system has reached a stable state. During this time, it receives telegrams via the bus, but does not evaluate them and does not trigger an alarm.

At the end of the initialization time, the device queries the state of all detectors, if this action has been parameterized. The set state before the bus voltage failure is then restored and the states of the objects are evaluated.

After bus voltage recovery, the following status objects are sent on the bus in the Master mode:

No.	Object function	Object name
5	Text, message	Event list memory
6	Text, detector name	Event list memory
7	Text, date/time	Event list memory
9	Text, triggered detector	Setting/unsetting
15	Status Externally set	Setting/unsetting
16	Status Internally set	Setting/unsetting
17	Status Ext. or int. set	Setting/unsetting
18	Status Ready for ext. setting	Setting/unsetting
19	Status Ready delayed setting	Setting/unsetting
20	Status Ready for int. setting	Setting/unsetting
23	Text, setting status	Setting/unsetting
24	Ext. sig. dev., strobe light	Alarming
25	Ext. sig. dev., siren	Alarming
26	Internal signaling device	Alarming
27	Telegr. Intrusion alarm	Alarming
28	Telegr. Technical alarm 1	Alarming

29	Telegr. Technical alarm 2	Alarming
30	Telegr. Panic alarm	Alarming
31	Telegr. Tamper alarm	Alarming
32	Telegr. Fault	Alarming
33	Text, alarm type	Alarming
34	Text, alarming detector	Alarming

Table 6: Objects sent after bus voltage recovery

The voltage failure is logged in the event list memory.

5 Appendix

5.1 Security technology terms



Zone Terminal



Glass breakage sensor



Combined signaling

The following overview provides a definition of some terms commonly used in security and surveillance technology.

Detector, zone

A detector or sensor is a device that detects a hazard by evaluating suitable physical variables (e.g. thermal radiation, vibration) and interrupts or short-circuits a circuit. Several detectors are combined in such a circuit.

Zone Terminal

The Zone Terminal evaluates the signals arriving from the detectors and transmits this information via the bus.

Opening monitoring, lock monitoring

The monitoring of windows, doors, hatches or similar for their open or closed state is referred to as opening monitoring.

Lock monitoring is used to monitor the closed or locked state of windows, doors or hatches. The triggering of the lock monitoring does not cause alarming, but prevents setting.

Peripheral protection, surface monitoring

Peripheral protection monitors all doors, windows, openings and other access points leading to outdoors. Surfaces (panes of glass, doors, external walls) can be monitored for breaching (destruction of the surface), climbing through (destruction of the surface and intrusion) or reaching through (destruction of the surface and reaching in) using so-called surface monitoring.

Interior monitoring

Interior monitoring directly evaluates movements within closed rooms.

Panic detector

Panic detectors are buttons activated by a person in danger. Pressing a button always triggers an alarm immediately.

Alarming

Local alarming is undertaken, e.g., using acoustic signaling devices (alarm sirens), visual signaling devices (strobe light) or by means of remote alarming (telephone). Acoustic signaling devices for indoor installation can be used for alarming within the monitored area.

Tamper monitoring

Any attempt to disable a monitoring system, parts of the monitoring system or to impair its correct function will result in a tamper event. For this purpose, cables and system components are monitored, e.g. using contacts on covers.

Setting/unsetting

This term refers to intrusion alarm systems. If a system is set, the detection of an intrusion attempt triggers alarming. If unset, alarming is not triggered by an intrusion attempt. Setting/unsetting is undertaken by a setting/unsetting device, e.g. a security door fitting or a device for code entry. The connection between the setting/unsetting device and the locking device makes it impossible to enter the building unintentionally when the system is set (guided set/unset procedure).

5.2 Important application notes

Here you will find important tips and information about setting up a monitoring system with the Security Module.

5.2.1 Avoiding false alarms

The most important issue while setting up a security system must be to avoid the triggering of false alarms. In addition to the direct costs incurred, false alarms will mean that an alarm system is considered unreliable and more trouble than it is worth.

5.2.2 Using motion detectors

Motion detectors are an effective way of monitoring indoor areas. However, there are a few important points to bear in mind while using them:

Selection

Use detectors that have reliable detection properties to avoid false alarms. VdS-certified detectors are recommended. They offer several advantages:

- Reliable detection in adjustable monitoring areas
- Protection against tampering, e.g. opening, covering or removal

So-called dual motion detectors, which have infrared and microwave sensors for example, offer optimum protection against false alarms. They only trigger if both types of detection have detected a movement.

Positioning

Motion detectors must be positioned so that they do not "look" outdoors. Moving objects and ventilation equipment (heating/cooling) should also be kept out of the detection area.

An outdoor motion detector should only be used to switch lighting.

5.2.3 "Guided set/unset procedure"

Unintentional entry into a set security area must be prevented to avoid false alarms. For example, bolt locks that extend and block the door when the alarm system is set are used for this purpose.

Bolt locks of type ESPE can be controlled, e.g., by a Switch Actuator.

5.2.4 Signaling

Consideration should always be given to whether external alarming can be replaced by a signaling device inside the building. For external alarming, silent alarming, e.g. via a Telephone Gateway, is recommended.

5.2.5 Use of Zone Terminals

Zone Terminals are recommended for connecting sensors. Compared to a binary input, they offer significant advantages, e.g.

- The cables from the Zone Terminal to the sensor are monitored. They therefore offer protection against accidental or deliberate disconnection or short-circuiting.
- The cables from the Zone Terminal to the sensor are galvanically isolated from the bus. This isolation provides effective protection of the bus against overvoltage caused externally. Furthermore, considerably longer cable lengths are possible.
- The sampling voltage must be interrupted briefly to reset certain detectors (e.g. glass breakage sensors) after triggering. Only a Zone Terminal can undertake this action.
- Zone Terminals provide the signals "walk test" and "set/unset" for controlling motion detectors.

5.3 Ordering details

Description	Type	Order no.	bbn 40 16779 EAN	Unit price [EURO]	Price group	Weight 1 Pc. [kg]	Packaging unit [pcs.]
Security Module MDRC	SCM/S 1.1	2CDG 110 024 R0011	58391 6		26	0.1	1

