ABB i-bus® KNX
Security Terminals
MT/U 2.12.2, MT/S 4.12.2M and 8.12.2M
Product Manual

Power and productivity
for a better world™

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1 General

Security Terminals are used as the interface between security technology sensors and the KNX. They are used for monitoring connected passive detectors, e.g. magnetic contacts and/or glass break sensors on the ABB i-bus® KNX and/or for connection of floating contacts in applications with enhanced security requirements.

1.1 Use of the product manual

This manual provides you with detailed technical information relating to the Security Terminals, their installation and programming.

This manual is divided into the following sections:

Chapter 1	General
Chapter 2	Device technology
Chapter 3	Commissioning
Chapter 4	Planning and application
Chapter A	Appendix

1.1.1 Structure of the product manual

All parameters are described in chapter 3.

Note
In this product manual, 2-fold, 4-fold and 8-fold Security Terminals are described. Using these devices, two, four and eight zones respectively can be monitored. However, as the functions for all zones are identical, only the functions of zone A will be described. Should the details in the product manual refer to Security Terminals, 2-fold corresponds to zone A…B, 4-fold corresponds to zones A…D and 8-fold corresponds to zones A…H; the designation zones A…X is used. Should the details in the product manual refer to all outputs, 2-fold corresponds to outputs 1…2, 4 and 8-fold refer to outputs 1…3; the designation output 1…X is used.

1.1.2 Note

Notes and safety instructions are represented as follows in this manual:

Note
Tips for usage and operation

Examples
Application examples, installation examples, programming examples

Important
These safety instructions are used as soon as there is danger of a malfunction without risk of damage or injury.

Caution
These safety instructions are used if there is a danger of damage with inappropriate use.

Danger
These safety instructions are used if there is a danger for life and limb with inappropriate use.

Danger
These safety instructions are used if there is a danger to life with inappropriate use.

1.2 Product and functional overview

The devices can be used as a system with autonomous alarm logic or in combination with the Security Module or an Intrusion Alarm Panel with KNX interface.

The devices require a 12 V DC SELV auxiliary voltage supply.

1.2.1 System benefits

The connection of KNX to security technology offers the user many significant advantages.

Clear operation features

The overview is assured by the clear operation and display features of the KNX. The building/property always informs the user in plain text about the current state of the building and security functions, and when necessary by telephone.

Cost-effectiveness

New possibilities provide economic benefits: Detectors can be used for several tasks.

A motion detector in an unset system can be used to switch lighting. Opening of a magnetic reed contact used to monitor a window automatically causes the room heating to be deactivated.

When the alarm is set, the same detectors are used for protection of the building against intrusion.

Comfort functions

Central functions can be activated in conjunction with setting the alarm system.

When leaving the building and setting the system, the lighting is switched off and the room temperature is reduced.

When unsetting the system, the occupants are greeted with a pleasantly lit atmosphere.

1.2.2 Terms

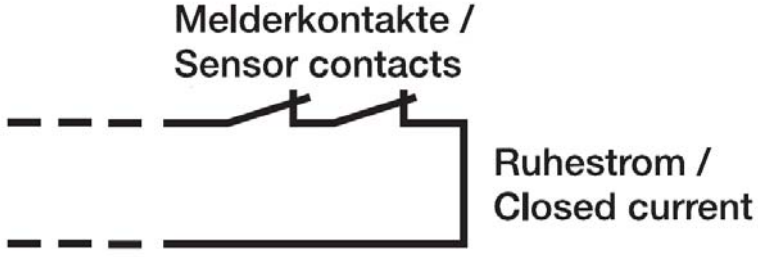
The following overview defines some terms that commonly occur in security and surveillance technology.

Zone

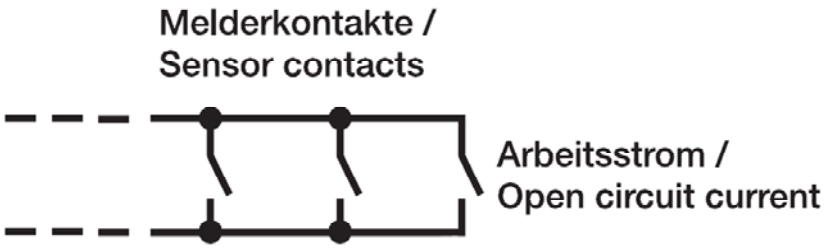
A zone – also referred to as a detector circuit – can consist of several detectors connected as a group. The zone is monitored and evaluated by the Security Terminal so that an interruption (open-circuit) or a short-circuit is detected and processed accordingly. This is referred to as the primary line. A non-monitored or non-supervised line is referred to as the secondary line.

Secondary line

Secondary lines are subdivided into closed circuit and open circuit types.



The closed circuit type is closed in its normal state. Should at least one contact open, the circuit is interrupted and it is evaluated by the Security Terminal.

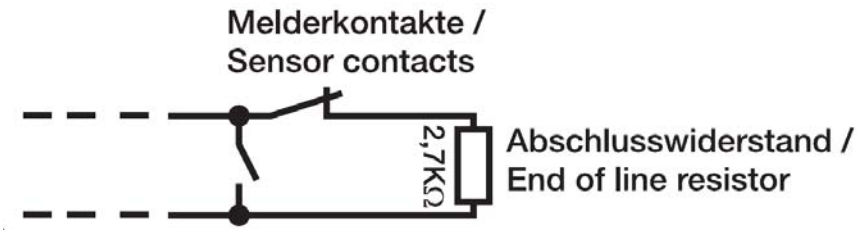


On the other hand, open circuit types are open in the normal state. Should at least one contact close, the circuit is closed and it is evaluated by the Security Terminal.

Note
The secondary line can be easily manipulated. Contacts in a closed circuit type cannot be evaluated after a short-circuit, and contacts in an open circuit type cannot be evaluated after an open circuit.

Primary line

The primary line has the advantage that the normally open and normally closed contacts can be connected in the same circuit. Normally, a defined voltage is present at the input of the Security Terminal; an end of line resistor (2.7 kOhm) is used as a voltage divider. A measurable change in this voltage occurs when there is a short-circuit or open-circuit on the line. Thus, an immediate evaluation occurs should there be an unintended change, a tampering attempt (intentional destruction or manipulation) or an incorrect connection that prevents the function of the line.



Setting

Setting is used to activate the Security Terminal as well as the intrusion detection sensors and to issue an alarm if an intrusion attempt is detected. Setting is differentiated in the following ways:

Internal setting

With internal setting, the exterior surveillance of the building is activated, i.e. the internal surveillance of the building is not activated. This type of setting is utilized when persons are located in the interior of the building, e.g. when they are sleeping.

External setting

External setting activates exterior and interior surveillance of the building. This type of setting is utilized when no persons are located in the building. Generally, external setting is performed outside the building.

Delayed setting

With delayed setting, external setting is performed within the building. A delay time determines the time frame in which the building must be vacated after the setting has been implemented. If the building is not vacated within this time, the system is generally not set as the internal and/or peripheral detectors register the presence of persons in the building. In order to unset the Security Terminal, the interior and/or peripheral detectors in the delayed setting area must feature an alarm delay. If the system is not unset during the alarm delay, an intrusion alarm is issued.

Errors during setting

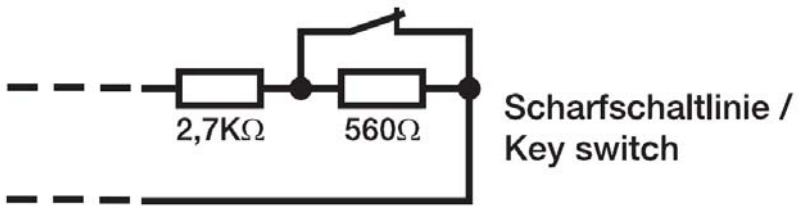
An error during setting means that the Security Terminal could not be set. The reasons why an error can occur during setting are as follows:

- Triggered detector
- Non-deleted alarm memory
- Existing alarms
- Malfunction in the auxiliary voltage supply

Setting line (monitored NC contact)

The setting line is also one of the primary lines, i.e. a monitored line. By using a fixed combination of resistors and an N/C contact (see illustration), the Security terminal detects whether it should set (open contact) or unset (closed contact). A tamper alarm is issued if there is a short-circuit or open-circuit on the setting line.

Setting device



A setting device (such as a key switch or code keypad) is used to set the Security Terminal. Setting can be undertaken, for example, using a mechanical key, a chipkey or by entering a numeric code. Alternatively, a panel can be used in conjunction with delayed setting for setting purposes.

Unsetting

Unsetting switches the Security Terminal to unset, i.e. triggering the interior and/or peripheral detectors, does not lead to an alarm.

Monitoring modes

There are different possibilities available for monitoring/surveillance:

Exterior monitoring

Exterior monitoring monitors opening of all doors, gates and windows of all kinds, e.g. cellar windows/entrances, skylights and stairwells leading out of the building. All openings are monitored by magnetic reed contacts. Magnetic reed contacts should be attached so that every type of opening is monitored, e.g. opening and tilting windows or removal of hinges on the doors. Several magnetic reed contacts should be used if necessary. All external windows should also be monitored with glass break sensors.

Interior monitoring

Interior monitoring is used to monitor all kinds of enclosed areas. The rooms are monitored for movement using motion detectors. All possible sources of interference should be considered when motion detectors are used, e.g. air currents, heating using fans, moving parts and pets. Correct mounting of the detector is also relevant. Preferred mounting locations are the corners of rooms away from the windows.

Lock monitoring

Lock monitoring is used to ensure enforcement, i.e. a lock monitoring detector that is not closed will prevent setting. With lock monitoring it is important that the detectors only trigger when locking has been completed. Locking monitoring will not lead to an alarm for any reason.

Tamper monitoring

Tamper monitoring guards the monitoring system. An attempt to disable the monitoring system or parts of the monitoring system, or any attempt to hinder its function leads to a tamper signal. Cables and system components are monitored for this purpose, e.g. with cover tamper contacts.

Emergency power back-up time

Emergency power back-up time is the time for which the monitoring system is powered by battery power in the event of a supply voltage failure.
The battery capacity should be rated to ensure that the power supply is sufficient for the entire monitoring system in the event of a supply voltage failure, even over the course of several hours.

Alarm

The Security Terminal differentiates between the following alarms:

Intrusion alarm

An intrusion alarm is activated if the system is internally or externally set and an interior or peripheral detector is triggered. A local alarm is triggered, see below.

Panic alarm

A panic alarm is triggered when a panic button is pressed.

Technical alarm

A technical alarm occurs when a technical detector is triggered.
A local alarm occurs in the unset and internally set state. Should a technical alarm be triggered in the externally set state, there is no local alarm, even after unsetting.

Tamper alarm

A tamper alarm is triggered when a tamper contact is triggered or a short-circuit or open-circuit is introduced onto the setting line.
A local alarm is triggered.

Alarm memory

When an alarm is triggered, it is important to be able to trace the detector or zone that has been activated. For example, the path of an intruder can be determined in this way. The alarm memory ensures that the triggered zone cannot reset itself on alarm. The alarm memory can only be deleted when the device is reset.

Alarms

A differentiation is made between the following alarm types:

Local alarming

The local alert (alarm) is used to indicate an alarm via optical and/or acoustic signalling devices, and the following differentiation is made:

- **External signalling device**
  An external signalling device describes optical (strobe or flashing light) or acoustic (siren) signalling on the exterior of a building. The optical signalling device is attached in a visible location on the building exterior to ensure that an alarm is highly visible. The acoustic signalling device is also attached externally on the building so that it is easily audible.
- **Internal signalling device**
  Acoustic signalling devices are usually used for internal signalling and include internal sirens inside the building. They alert persons located in a building when there is an alarm.

Remote alarming (silent alarm)

The remote alarm is used to notify an alarm, e.g. intrusion or panic alarm, via a telephone dialling device to a security service.

Reset

At a reset, the zones are briefly disconnected from the voltage supply, so that devices with an integrated alarm memory (water detectors, passive glass break sensors) are again ready to function. In addition, the alarm memory of the Security Terminal as well as all existing alarms are reset. All triggered zones and existing faults must be remedied beforehand. A reset can only be performed in the unset state.

1.2.3 Description of the inputs and outputs

The devices provide two to eight monitored lines, so-called zones or detector circuits, which are continuously monitored with a 2.7 kΩ end of line resistor. This offers protection against intentional or unintentional disconnection or short-circuiting of the detector cables. The zones can be operated optionally with normally closed or normally opened configurations.

The devices are suitable for connection of commercially available detectors, e.g.:

- Magnet reed contacts
- Passive IR motion detectors
- Glass break sensors
- Water detectors

Connection of floating contacts in applications with enhanced security requirements is also possible.

Furthermore, a setting device that is monitored by a setting line can also be connected.

Security Terminal MT/U 2.12.2 features two freely programmable outputs with a rated voltage of 12 V DC and a max. short-circuit current of 0.6 A. The rated voltage U_n of the outputs is supplied internally via the 12 V DC auxiliary voltage of the device.

Security Terminal MT/S x.12.2M features three freely programmable outputs. A floating output (output 1) with a rated voltage U_n from 12 to 24 V DC and two outputs (outputs 2 and 3) with a rated voltage U_n of 12 V DC. The outputs are rated for switching short-circuit currents of max. 0.6 A. The rated voltage U_n of the floating output (output 1) should be connected separately. The rated voltage of both outputs (outputs 2 and 3) is supplied internally by the 12 V DC auxiliary device supply.

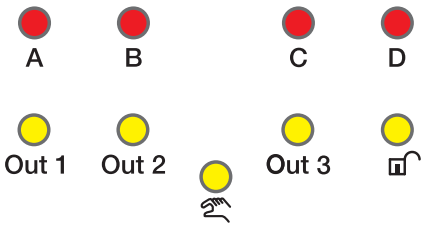
All outputs are monostable relays.

1.2.4 Display elements

Note
The display elements are generally non-operational in the externally set state. The display elements only operate in the unset and internally set state.

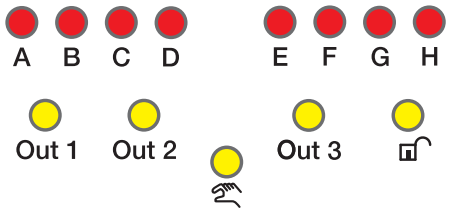
Security Terminal MT/U 2.12.2 does not have display elements.

Nine indicator LEDs are located on the front of Security Terminal MT/S 4.12.2M*:*



Display elements on front of MT/S 4.12.2M

Thirteen indicator LEDs are located on the front of Security Terminal MT/S 8.12.2M:



Display elements on front of MT/S 8.12.2M

LEDs A…D/H

Each zone LED indicates its status. If a detector is triggered in the unset and internally set state, the LED indicates the status of the zone.

- The LED lights if the input has triggered. Depending on the parameterisation, see Monitoring mode of the zone from page 46, this is undertaken either by opening (normally closed), short-circuit (normally opened) or by a short-circuit and open-circuit (end of line resistor 2.7 kOhm).
- The LED flashes periodically every 1.7 seconds when the alarm memory is activated by an intrusion, panic or technical alarm. The alarm memory can only be reset by a reset.
- The LED flashes periodically every 0.4 seconds with a tamper alarm. The LED indicates the value 1, the communication objects *Tamper alarm* and *Tamper alarm setting device*.

LED (set/unset)

- The LED lights up when the device is unset.
- The LED is off if the device is internally or externally set.
- The LED flashes periodically every 1.7 seconds for an intrusion alarm.

LED (manual operation)

- The LED lights if manual operation is active.
- The LED flickers periodically every 0.2 seconds during the changeover process between KNX operation and manual operation, and vice versa.

Out 1…3

The LED lights if the output contact is closed.

Special states

- *Reset:* LEDs A…D/H light up briefly several times and then switch off again. Detector circuits that are still triggered will not switch off.
- *Failure of 12 V DC auxiliary voltage* LEDs A…D/H flash periodically every 0.4 seconds.

The following table provides a brief overview of the flashing behaviour:

Flashing behaviour overview	**Flashing frequency**
Flashes	1.7 s
Flashes quickly	0.4 s
Flickers	0.2 s
LEDs A…D/H (zones)	
ON	Input triggered
OFF	Input OK
Flashes	Alarm memory (intrusion alarm, panic alarm, technical alarm)
Flashes quickly	Tamper alarm/tamper alarm setting device
LEDs Out 1…3 (outputs)	
ON	Contact closed
OFF	Contact open
LED (set/unset)	
ON	Unset
OFF	Internally or externally set
Flashes	Intrusion alarm
LED (manual operation)	
ON	Manual operation
OFF	KNX operation
Flickers	Switchover process
Special states	
LEDs A…D/H flash quickly	Failure of 12 V DC auxiliary voltage
LEDs A…D/H briefly light up several times	Reset

1.2.5 Operating controls

Security Terminal MT/U 2.12.2 does not have operating elements.

Five buttons for manual operation are located on the front of the Security Terminal MT/S x.12.2M:

The operating controls are enabled or inhibited by button *Manual control*. The button must be pushed for at least 1.5 seconds for this purpose. This prevents unintentional actuation of the operating controls.

The following states can be manually reset via button *Reset*:

- Alarms
- Operating fault (failure of 12 V DC auxiliary voltage)

Furthermore, the detector circuits for the reset time are disconnected from the supply in order to reset the alarm memories of the detectors and detector circuits.

The outputs can be switched manually via buttons *Output 1, Output 2* and *Output 3*.

2 Device technology

2.1 MT/U 2.12.2

MT/U 2.12.2

2CDC 071 026 S0010

Security Terminal MT/U 2.12.2 is used as the interface between security technology sensors and the KNX. The device features 2 inputs, so-called zones. They are used for monitoring connected passive detectors, e.g. magnetic contacts and/or glass break sensors on the ABB i-bus® KNX and/or for connection of floating contacts in applications with enhanced security requirements.
The device can be used as a system with autonomous alarm logic or in combination with the Security Module or an Intrusion Alarm Panel with KNX interface.

The device is flush mounted in an installation box ∅ 55 mm.

A 12 V DC SELV auxiliary voltage supply is required,
e.g. NTU/S 12.2000.1.

Typical applications include the monitoring of door and window opening, the detection of glass breaks as well as monitoring of rooms using motion detectors.

2.1.1 Technical Data

Supply	Bus voltage	21 …30 V DC via KNX
	Current consumption KNX	< 6 mA
	Auxiliary power supply required	12 V DC ± 1.6 V SELV, Ripple ≤ 1.0 V_{pp}
	Auxiliary voltage current consumption	Min. 13 mA and max. 43 mA (without external loads)
Inputs	Number	2
	No-load voltage	12 V DC
	Short-circuit current	Maximum 6 mA
	Permissible cable resistance	Maximum 200 Ω
	Primary line (detector circuits)	End of line resistor: 2.7 kΩ
	Setting/Unsetting input	Resistor combination (2.7 kΩ + 560 Ω in series)
Outputs	Number	2
	Rated voltage U_n	12 V DC (internal jumper)
	Short-circuit current	Maximum 0.6 A
	Type	Monostable relay
Connections	KNX	Bus connection terminal (black/red)
	Auxiliary voltage	Via screw terminals (0 V/12 V)
	Inputs	Via screw terminals (0 V/+)
	Outputs	Via screw terminals, common 0 V connection via auxiliary voltage

Bus connection terminals	Screw terminals	0.14…1.5 mm^2 stranded 0.14…1.5 mm^2 solid Multiple conductor connection capacity (equal cross-sections) 0.08…0.75 mm^2 stranded 0.08…0.50 mm^2 solid
	Tightening torque	Maximum 0.6 Nm
Operating and display elements	Programming button/LED	For assignment of the physical address
Enclosure	IP 20	To EN 60529
Safety class	II	To EN 61140
Isolation category	Overvoltage category	III to EN 60 664-1
	Pollution degree	2 to EN 60664-1
Temperature range	Operation	−5 °C…+45 °C
	Transport	−25 °C…+70 °C
	Storage	−25 °C…+55 °C
Ambient conditions	Maximum air humidity	93 %, no condensation allowed
Installation	Flush mounted device (FM)	Flush mounted device for fitting in an installation box (Ø 55 mm)
	Dimensions	54 x 28 mm (Ø x H)
Mounting position	as required	
Weight	0.05 kg	
Housing, colour	Plastic, halogen free, grey	
Approvals	KNX to EN 50 090-1, -2	
CE mark	in accordance with the EMC guideline and low voltage guideline	

Application program	**Maximum number of communication objects**	**Maximum number of group addresses**	**Maximum number of associations**
Monitor Report 2f/1.0	28	254	255

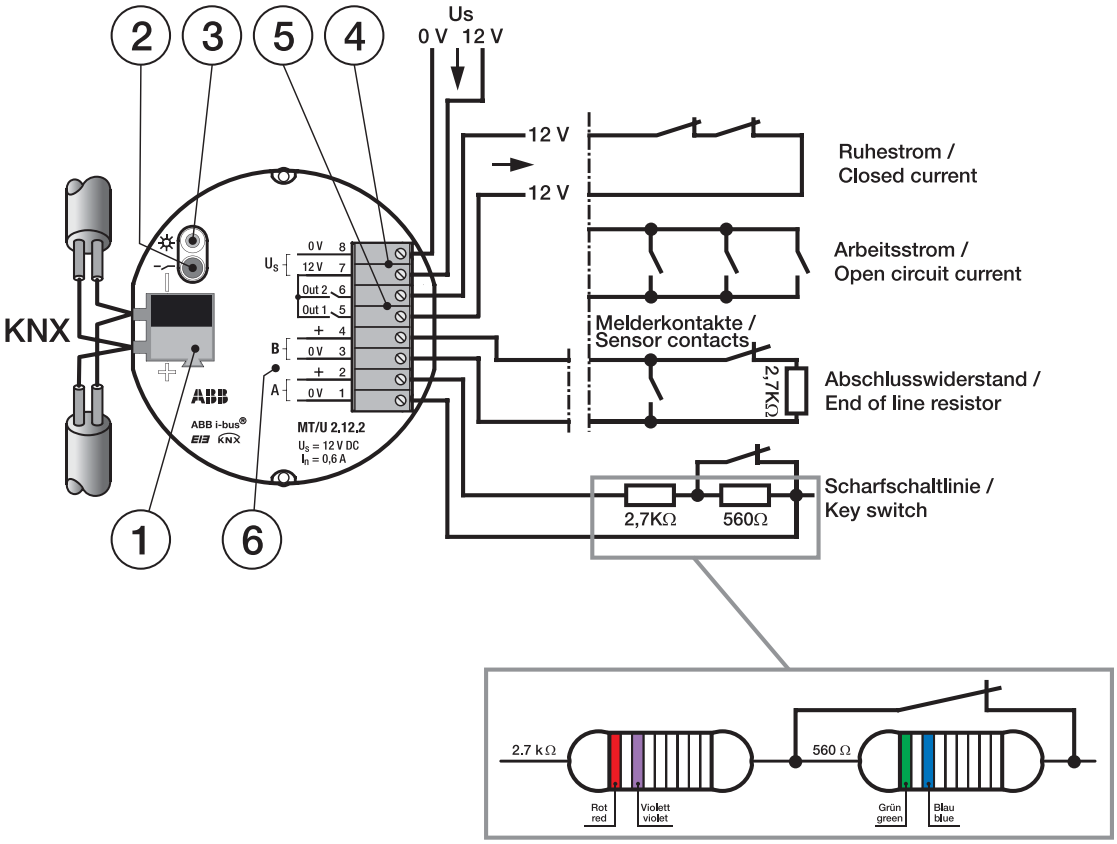
Note

The programming requires EIB Software Tool ETS2 V1.3a or higher.

If ETS3 is used, a *.VD3 or higher type file must be imported. The application program is available in the ETS2 / ETS3 at ABB / Security and Surveillance / Security Terminals.

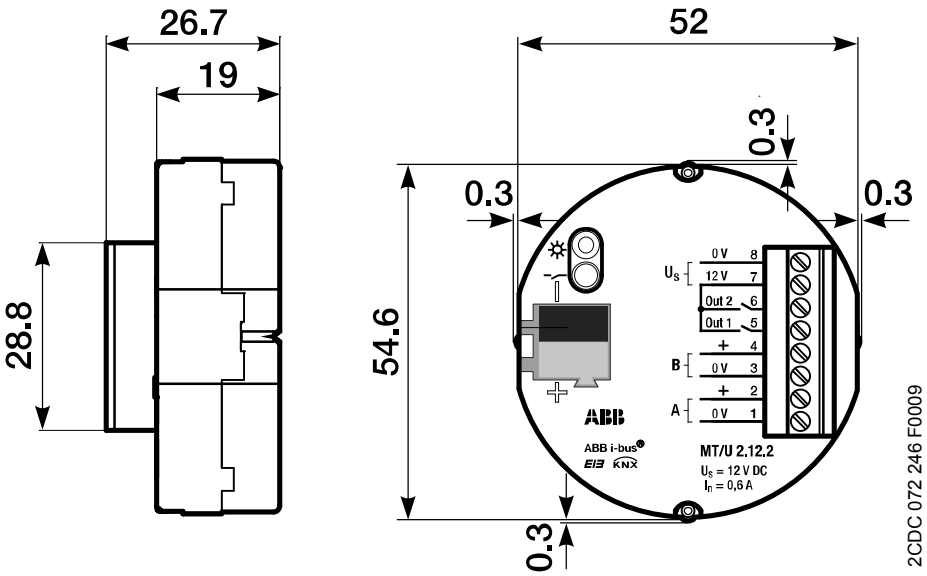
The device does not support the closing function of a project or the KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code* (ETS3), it has no effect on this device. Data can still be read and programmed.

2.1.2 Connection schematic MT/U 2.12.2



1 Bus connection terminal
2 Programming button
3 Programming LED
4 12 V DC auxiliary voltage (0V/12 V)
5 Relay outputs (Out 1 and Out 2)
6 Zones (A and B)

2.1.3 Dimension drawing MT/U 2.12.2



2.1.4 Assembly and installation

The mounting position can be selected as required.

Accessibility to the device for the purpose of operation, testing, visual inspection, maintenance and repair must be provided compliant to VDE 0100-520.

The connection to the bus is implemented using the supplied bus connection terminal.

The device is ready for operation after connection of the bus voltage and the auxiliary voltage.

Commissioning requirements

In order to commission the device, a PC with ETS (from ETS2 V1.3a or higher) as well as an interface to the ABB i-bus® KNX, e.g. via a KNX interface, is required.

The installation and commissioning may only be carried out by qualified electrical specialists. The appropriate norms, guidelines, regulations and specifications for your country should be observed when planning and setting up electrical installations and security systems for intrusion and fire detection.

Important
The Security Terminal is not a fire control panel compliant to EN 54-2 /-4!

- Protect the device from damp, dirt and damage during transport, storage and operation.
- Only operate the device within the specified technical data limits!
- Only operate the device in the enclosed housing!

Supplied state

The device is supplied with the physical address 15.15.255.
The application program is pre-installed. It is therefore only necessary to load group addresses and parameters during commissioning.
However, the complete application program can be reloaded if required.
A longer downtime may result if the application program is changed or after a discharge.

Assignment of the physical address

The assignment and programming of the physical address is carried out in the ETS.

Cleaning

If devices become dirty, they can be cleaned using a dry cloth. Should a dry cloth not remove the dirt, the device can be cleaned using a slightly damp cloth and soap solution. Corrosive agents or solutions should never be used.

Maintenance

The device is maintenance-free. No repairs should be carried out by unauthorised personnel if damage occurs, e.g. during transport and/or storage. The warranty expires if the device is opened.

2.2 MT/S 4.12.2M

MT/S 4.12.2M

2CDC 071 024 S0010

Security Terminal MT/S 4.12.2M is a modular installation device (MDRC) in Pro*M* design. It is intended for installation in the distribution board on 35 mm mounting rails and is used as the interface between security technology sensors and KNX. The device features 4 inputs, so-called zones. They are used for monitoring connected passive detectors, e.g. magnetic contacts and/or glass break sensors on the ABB i-bus® KNX and/or for connection of floating contacts in applications with enhanced security requirements.
The device can be used as a system with autonomous alarm logic or in combination with the Security Module or an Intrusion Alarm Panel with KNX interface.

A 12 V DC SELV auxiliary voltage supply is required, e.g. NTU/S 12.2000.1.

Typical applications include the monitoring of door and window opening, the detection of glass breaks as well as monitoring of rooms using motion detectors.

2.2.1 Technical Data

Supply	Bus voltage	21 …30 V DC via KNX
	Current consumption KNX	< 6 mA
	Auxiliary power supply required	12 V DC ± 1.6 V SELV, Ripple ≤ 1.0 V_{pp}
	Auxiliary voltage current consumption	Min. 13 mA and max. 64 mA (without external loads)
Inputs	Number	4
	No-load voltage	12 V DC
	Short-circuit current	Maximum 6 mA
	Permissible cable resistance	Maximum 200 Ω
	Primary line (detector circuits)	End of line resistor: 2.7 kΩ
	Setting/Unsetting input	Resistor combination (2.7 kΩ + 560 Ω in series)
Outputs	Number	3
	Short-circuit current	Maximum 0,6 A
	Type	Monostable relay
	Output 1: Nominal voltage U_n floating	12…24 V DC
	Output 2 and 3: Rated voltage U_n	12 V DC (internal jumper)
Connections	KNX	Bus connection terminal (black/red)
	Auxiliary voltage	Via screw terminals (0 V/12 V)
	Inputs	Via screw terminals (0 V/+)
	Outputs	Via screw terminals (outputs 2 and 3, common 0 V connection via auxiliary voltage)

Bus connection terminals	Screw terminals	0.2…2.5 mm² stranded 0.2…2.5 mm² solid Multiple conductor connection capacity 0.25…0.75 mm² (equal cross-sections) 0.25…1.50 mm² (with ferrules)
	Tightening torque	Maximum 0.6 Nm
Operating and display elements	Programming button/LED	For assignment of the physical address
	Button /LED	For switchover between manual operation and KNX operation
	Button Reset	For manual reset
	3 x button Switch output LEDs Out 1 Out 2 Out 3	For switching and display
	LED set/unset	Display of set/unset
	LEDs zones A B C D	Display of triggered zones, alarm memory
Enclosure	IP 20	To EN 60529
Safety class	II	To EN 61140
Isolation category	Overvoltage category Pollution degree	III to EN 60 664-1 2 to EN 60664-1
Temperature range	Operation	−5 °C…+45 °C
	Transport	−25 °C…+70 °C
	Storage	−25 °C…+55 °C
Ambient conditions	Maximum air humidity	93 %, no condensation allowed
Design	Modular installation device (MDRC)	Modular installation device, Pro*M*
	Dimensions	90 x 72 x 67,5 mm (H x W x D)
	Mounting width in space units	4 modules at 18 mm
	Mounting depth	67.5 mm
Installation	On 35 mm mounting rail	To EN 60 715
Mounting position	As required	
Weight	0.15 kg	
Housing, colour	Plastic, halogen free, grey	
Approvals	KNX to EN 50 090-1, -2	
CE mark	In accordance with the EMC guideline and low voltage guideline	

Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
Monitor Report Display 4f/1.0	47	254	255

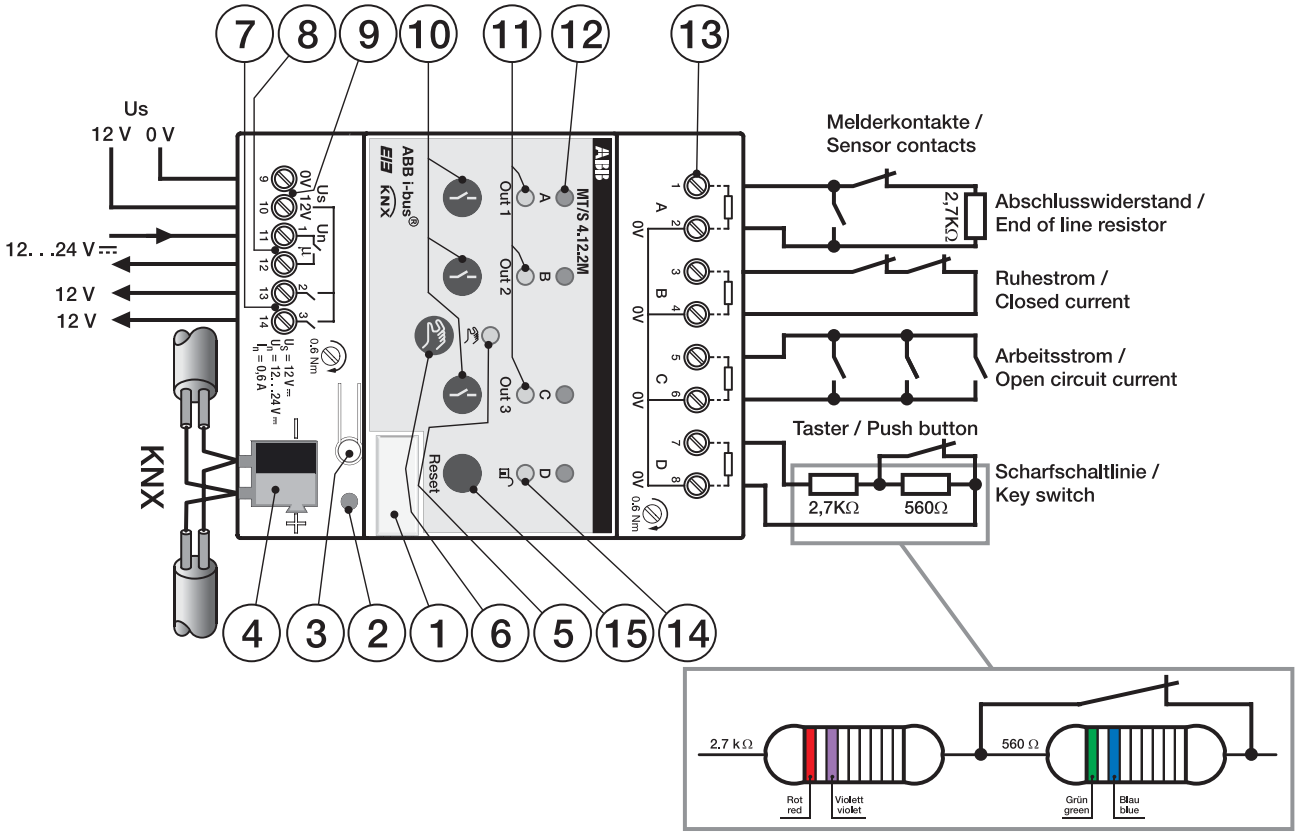
Note

The programming requires EIB Software Tool ETS2 V1.3a or higher.

If ETS3 is used, a *.VD3 or higher type file must be imported. The application program is available in the ETS2 / ETS3 at ABB / Security and Surveillance/Security Terminals.

The device does not support the closing function of a project or the KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code* (ETS3), it has no effect on this device. Data can still be read and programmed.

2.2.2 Connection schematic MT/S 4.12.2M



1 Label carrier

2 Programming LED

3 Programming button

4 Bus terminal connection

5 LED manual operation

6 Button Manual operation

7 Relay outputs 2 and 3

8 Relay output 1, floating

9 12 V DC auxiliary voltage (0V/12 V)

10 Button (Out 1…Out 3)

11 LEDs outputs Out 1 Out 2 Out 3

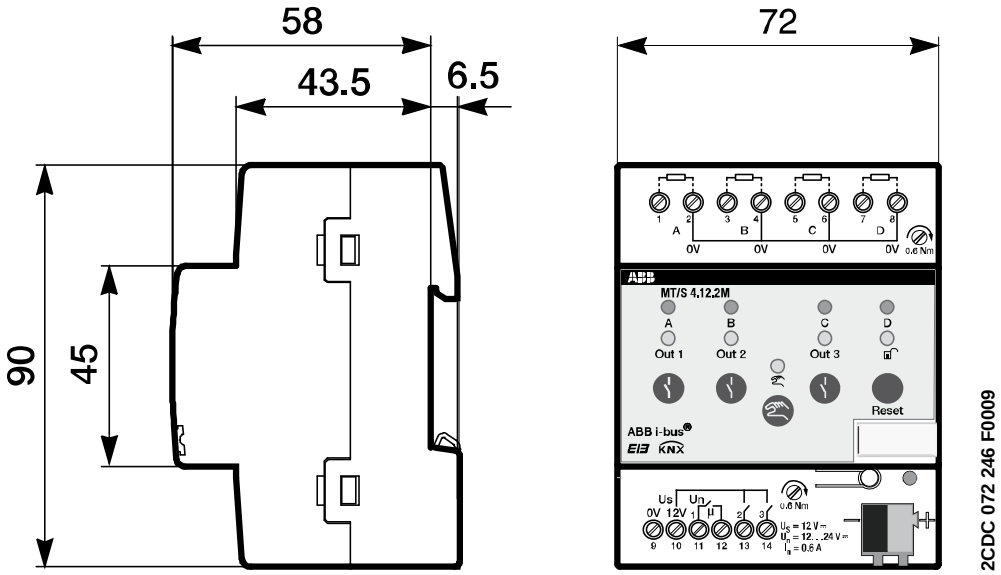
12 LEDs zones A B C D

13 Zone connection

14 LED set/unset

15 Button Reset

2.2.3 Dimension drawing MT/S 4.12.2M



2.2.4 Assembly and installation

The device is a modular installation device for quick installation in the distribution board on 35 mm mounting rails to EN 60 715.

Accessibility to the device for the purpose of operation, testing, visual inspection, maintenance and repair must be provided compliant to VDE 0100-520.

The connection to the bus is implemented using the supplied bus connection terminal.

The device is ready for operation after connection of the bus voltage and the auxiliary voltage.

Commissioning requirements

In order to commission the device, a PC with ETS (from ETS2 V1.3a or higher) as well as an interface to the ABB i-bus® KNX, e.g. via a KNX interface, is required.

The installation and commissioning may only be carried out by qualified electrical specialists. The appropriate norms, guidelines, regulations and specifications for your country should be observed when planning and setting up electrical installations and security systems for intrusion and fire detection.

Important
The Security Terminal is not a fire control panel compliant to EN 54-2 /-4!

- Protect the device from damp, dirt and damage during transport, storage and operation.
- Only operate the device within the specified technical data limits!
- The device should only be operated in an enclosed housing (distribution board)!

Supplied state

The device is supplied with the physical address 15.15.255.
The application program is pre-installed. It is therefore only necessary to load group addresses and parameters during commissioning.
However, the complete application program can be reloaded if required.
A longer downtime may result if the application program is changed or after a discharge.

Assignment of the physical address

The assignment and programming of the physical address is carried out in the ETS.

Cleaning

If device becomes dirty, it can be cleaned using a dry cloth. Should a dry cloth not remove the dirt, the device can be cleaned using a slightly damp cloth and soap solution. Corrosive agents or solutions should never be used.

Maintenance

The device is maintenance-free. No repairs should be carried out by unauthorised personnel if damage occurs, e.g. during transport and/or storage. The warranty expires if the device is opened.

2.3 MT/S 8.12.2M

MT/S 8.12.2M

2CDC 071 025 S0010

Security Terminal MT/S 8.12.2M is a modular installation device (MDRC) in Pro*M* design. It is intended for installation in the distribution board on 35 mm mounting rails and is used as the interface between security technology sensors and KNX. The device features 8 inputs, so-called zones. They are used for monitoring connected passive detectors, e.g. magnetic contacts and/or glass break sensors on the ABB i-bus® KNX and/or for connection of floating contacts in applications with enhanced security requirements.
The device can be used as a system with autonomous alarm logic or in combination with the Security Module or an Intrusion Alarm Panel with KNX interface.

A 12 V DC SELV auxiliary voltage supply is required, e.g. NTU/S 12.2000.1.

Typical applications include the monitoring of door and window opening, the detection of glass breaks as well as monitoring of rooms using motion detectors.

2.3.1 Technical Data

Supply	Bus voltage	21 …30 V DC via KNX
	Current consumption KNX	< 6 mA
	Auxiliary power supply required	12 V DC ± 1.6 V SELV, Ripple ≤ 1.0 V_{pp}
	Auxiliary voltage current consumption	Min. 13 mA and max. 83 mA (without external loads)
Inputs	Number	8
	No-load voltage	12 V DC
	Short-circuit current	Maximum 6 mA
	Permissible cable resistance	Maximum 200 Ω
	Primary line (detector circuits)	End of line resistor: 2.7 kΩ
	Setting/Unsetting input	Resistor combination (2.7 kΩ + 560 Ω in series)
Outputs	Number	3
	Short-circuit current	Maximum 0.6 A
	Type	Monostable relay
	Output 1: Nominal voltage U_n floating	12…24 V DC
	Output 2 and 3: Rated voltage U_n	12 V DC (internal jumper)
Connections	KNX	Bus connection terminal (black/red)
	Auxiliary voltage	Via screw terminals (0 V/12 V)
	Inputs	Via screw terminals (0 V/+)
	Outputs	Via screw terminals (outputs 2 and 3, common 0 V connection via auxiliary voltage)

Bus connection terminals	Screw terminals	0.2…2.5 mm² stranded 0.2…2.5 mm² solid Multiple conductor connection capacity 0.25…0.75 mm² (equal cross-sections) 0.25…1.50 mm² (with ferrules)
	Tightening torque	Maximum 0.6 Nm
Operating and display elements	Programming button/LED	For assignment of the physical address
	Button /LED	For switchover between manual operation and KNX operation
	Button Reset	For manual reset
	3 x button Switch output LEDs Out 1 Out 2 Out 3	For switching and display
	LED set/unset	Display of set/unset
	LEDs zones A B C D E F G H	Display of triggered zones, alarm memory
Enclosure	IP 20	To EN 60529
Safety class	II	To EN 61140
Isolation category	Overvoltage category Pollution degree	III to EN 60 664-1 2 to EN 60664-1
Temperature range	Operation	−5 °C…+45 °C
	Transport	−25 °C…+70 °C
	Storage	−25 °C…+55 °C
Ambient conditions	Maximum air humidity	93 %, no condensation allowed
Design	Modular installation device (MDRC)	Modular installation device, Pro*M*
	Dimensions	90 x 72 x 67,5 mm (H x W x D)
	Mounting width in space units	4 modules at 18 mm
	Mounting depth	67.5 mm
Installation	On 35 mm mounting rail	To EN 60 715
Mounting position	As required	
Weight	0.15 kg	
Housing, colour	Plastic, halogen free, grey	
Approvals	KNX to EN 50 090-1, -2	
CE mark	In accordance with the EMC guideline and low voltage guideline	

Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
Monitor Report Display 8f/1.0	63	254	255

Note

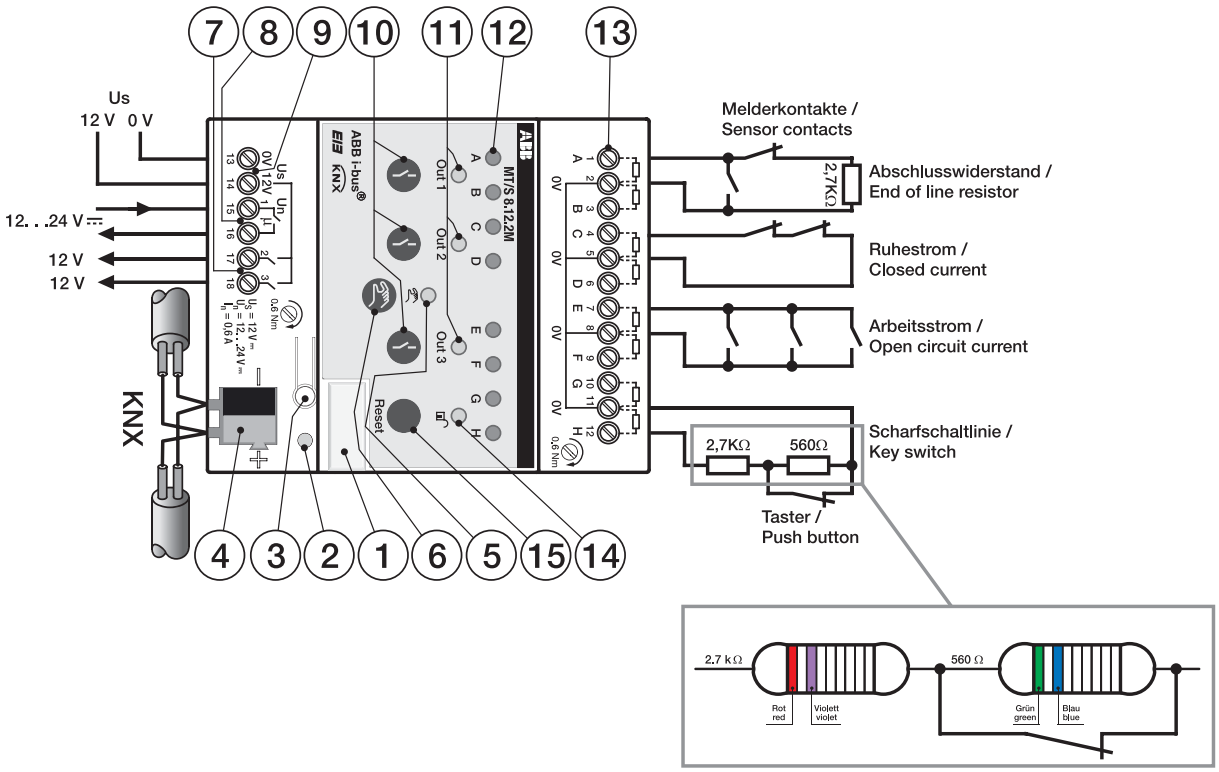
The programming requires EIB Software Tool ETS2 V1.3a or higher.

If ETS3 is used, a *.VD3 or higher type file must be imported.

The application program is available in the ETS2 / ETS3 at ABB / Security and Surveillance / Security Terminals.

The device does not support the closing function of a project or the KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code* (ETS3), it has no effect on this device. Data can still be read and programmed.

2.3.2 Connection schematic MT/S 8.12.2M



1 Label carrier

2 Programming LED

3 Programming button

4 Bus terminal connection

5 LED manual operation

6 Button Manual operation

7 Relay outputs 2 and 3

8 Relay output 1, floating

9 12 V DC auxiliary voltage (0 V/12 V)

10 Button (Out 1…Out 3)

11 LEDs outputs Out 1 Out 2 Out 3

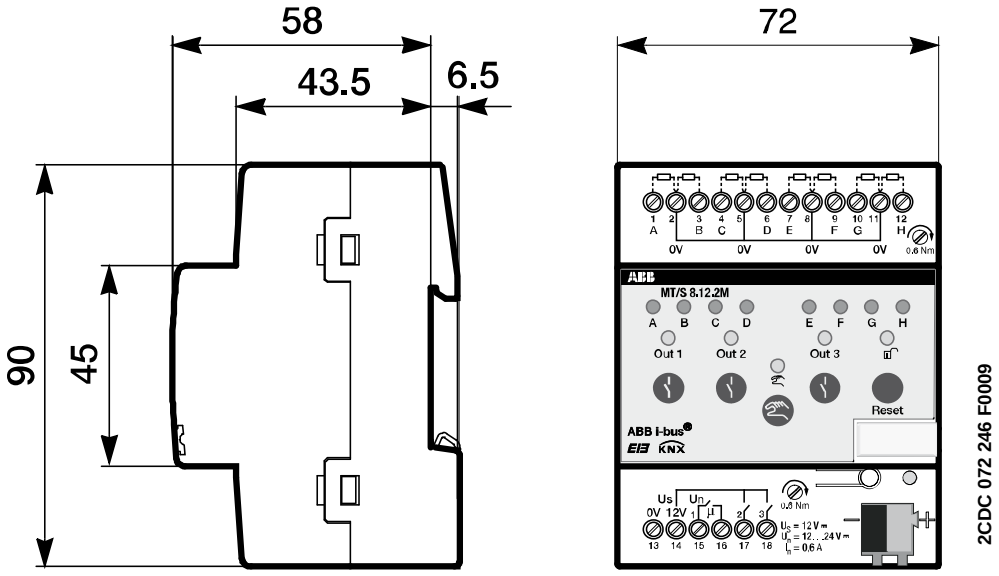
12 LEDs zones A B C D E F G H

13 Zone connection

14 LED set/unset

15 Button Reset

2.3.3 Dimension drawing MT/S 8.12.2M



2CDC 072 246 F0009

2.3.4 Assembly and installation

The device is a modular installation device for quick installation in the distribution board on 35 mm mounting rails to EN 60 715.

Accessibility to the device for the purpose of operation, testing, visual inspection, maintenance and repair must be provided compliant to VDE 0100-520.

The connection to the bus is implemented using the supplied bus connection terminal.

The device is ready for operation after connection of the bus voltage and the auxiliary voltage.

Commissioning requirements

In order to commission the device, a PC with ETS (from ETS2 V1.3a or higher) as well as an interface to the ABB i-bus® KNX, e.g. via a KNX interface, is required.

The installation and commissioning may only be carried out by qualified electrical specialists. The appropriate norms, guidelines, regulations and specifications for your country should be observed when planning and setting up electrical installations and security systems for intrusion and fire detection.

Important
The Security Terminal is not a fire control panel compliant to EN 54-2 /-4!

- Protect the device from damp, dirt and damage during transport, storage and operation.
- Only operate the device within the specified technical data limits!
- The device should only be operated in an enclosed housing (distribution board)!

Supplied state

The device is supplied with the physical address 15.15.255.
The application program is pre-installed. It is therefore only necessary to load group addresses and parameters during commissioning.
However, the complete application program can be reloaded if required.
A longer downtime may result if the application program is changed or after a discharge.

Assignment of the physical address

The assignment and programming of the physical address is carried out in the ETS.

Cleaning

If device becomes dirty, it can be cleaned using a dry cloth. Should a dry cloth not remove the dirt, the device can be cleaned using a slightly damp cloth and soap solution. Corrosive agents or solutions should never be used.

Maintenance

The device is maintenance-free. No repairs should be carried out by unauthorised personnel if damage occurs, e.g. during transport and/or storage. The warranty expires if the device is opened.

3 Commissioning

3.1 Overview

The programming is implemented using the Engineering Tool Software ETS2 V1.3 or higher. If ETS3 is used, a “*.VD3” type file must be imported.

3.2 Parameters

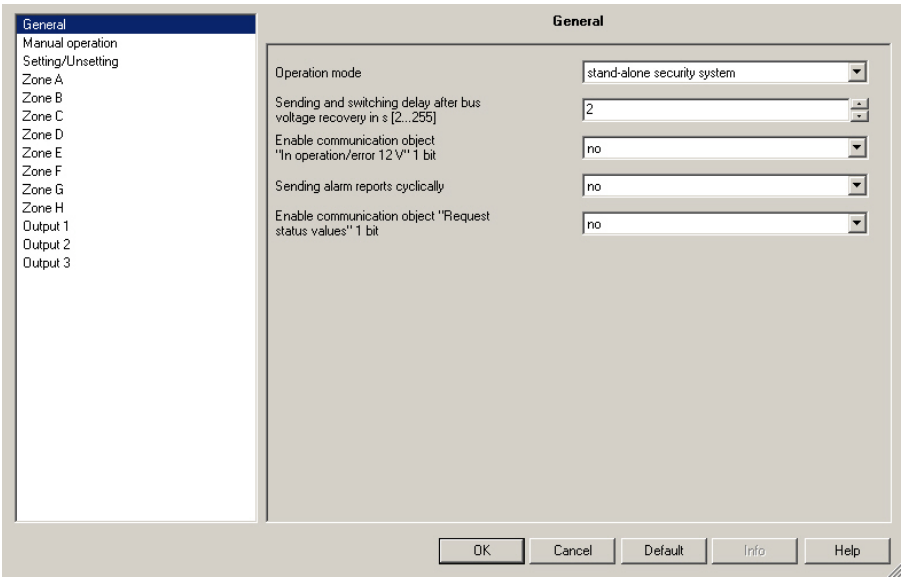
The following chapter describes the parameters of the Security Terminal using the parameter window. The parameter window features a dynamic structure so that further parameters may be enabled depending on the parameterisation and the function.

The default values of the parameters are underlined,
e.g.

Option: yes
no

3.3 Parameter window *General*

Higher level parameters can be set in the *General* parameter window.



Mode

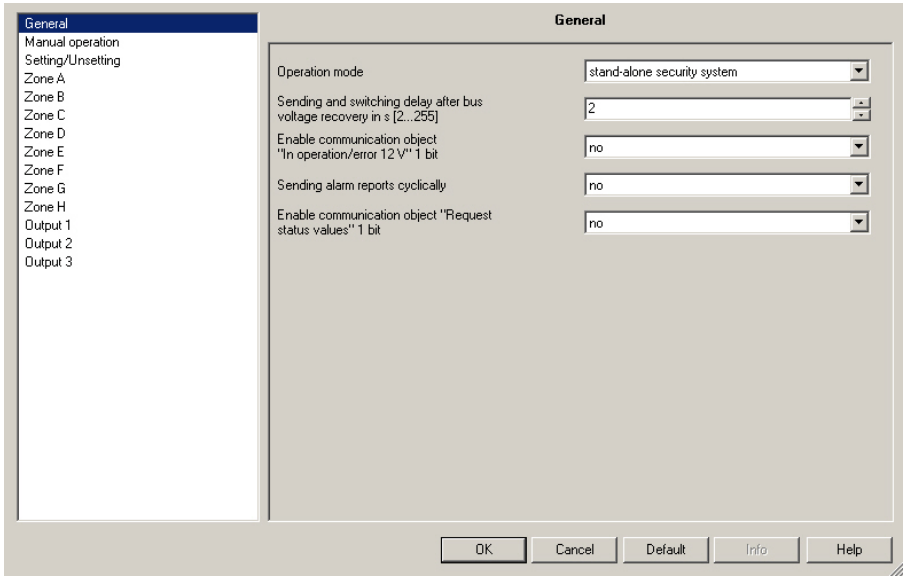
Options: stand-alone security system
with Security Module / Intrusion alarm system

- *stand-alone security system: The Security Terminal* is used as a stand-alone alarm system without any higher level control. All functions and communication objects of the device are available in this mode.
- *with Security Module / Intrusion alarm system: The Security Terminal* is used in conjunction with a higher-level control, e.g. the security module or an intrusion alarm system with a KNX interface. In this mode parameter, windows, functions and communication objects, e.g. for setting, are masked out to enable a more clear overview for parameterisation.

Note
As there are some differences in the parameter windows, functions and communication objects, all parameter windows for each mode will be described separately.

3.3.1 Operation mode *stand-alone security system*

In parameter window *General*, the higher-level parameters can be set for the respective operating mode.



Sending and switching delay after bus voltage recovery in s [2…255]

Options: 2…255

Telegrams are only received during the send and switching delay. The telegrams are not processed however, and the outputs remain unchanged. No telegrams are sent on the bus.

After the sending and switching delay, telegrams are sent, and the state of the outputs is set to correspond to the parameterisation or the communication object values.

If communication objects are read during the sending and switching delay, e.g. by a visualisation system, these read requests are stored, and a response is sent after the send and switching delay has been completed.

An initialisation time of about two seconds is included in the delay time. The initialisation time is the time that the processor requires to be ready to function.

How does the device behave with bus voltage recovery?

After bus voltage recovery, the device always waits for the send delay time to elapse before sending telegrams on the bus.

Enable communication object "In operation/error 12 V" 1 bit

Option: yes
no

- *yes:* The communication object *In operation/error 12 V* is enabled. It indicates the availability of the 12 V DC auxiliary voltage. Normally the communication object has the value 0 and the value 1 in the event of a fault. Furthermore, this communication object is used for cyclic monitoring of the device. At bus voltage failure, this information can be received, for example, from a monitoring module.
- *no:* The communication object *In operation/error 12 V* is not enabled.

With option *yes* the following parameters appear:

Send object value

Options: not cyclical: 0 = OK, 1 = Error
not cyclical: 1 = OK, 0 = Error
cyclical: 0 = OK, 1 = Error
cyclical: 1 = OK, 0 = Error

This parameter defines which communication object value is sent cyclically or non-cyclically on the bus.

The following parameter appears, should the communication object value be sent cyclically:

Telegram repeated every ... in s [1...65,535]

Options: 1…60…65,535

This parameter defines the interval at which the communication object *In operation/error 12 V* is cyclically sent.

Reset error 12 V

Options: automatically, if error is eliminated
via reset

- *automatically, if error is eliminated:* After the cause has been remedied (restoring the 12 V DC auxiliary voltage), the communication object is automatically reset.
- *via reset:* The error is displayed until it is remedied and a manual reset of the device has been performed.
  A further parameter appears:

  Fault of 12 V DC auxiliary supply triggers tamper alarm

  Options: yes
  no

  This parameter defines whether in the event of a fault in the 12 V DC auxiliary supply, the communication object *Tamper alarm* is triggered in addition to the change of communication object value *In operation/error 12 V*, i.e., whose value is set to 1.

Sending alarm reports cyclically

Options: yes
no

This parameter determines whether the alarms are sent cyclically on the bus.

- *no:* The alarm messages are only sent once on the bus with changes in state.
- *yes:* All alarm messages are sent cyclically on the bus.
  A further parameter appears:

  Telegrams repeated every ...
  in s [10...3600]

  Options: 1…60…3600

  This parameter determines the time intervals at which the alarm messages are cyclically sent.

Note
The following alarm messages are sent cyclically: • Intrusion alarm • Panic alarm • Technical alarm • Tamper alarm

Enable communication object "Request status values" 1 bit

Options: yes
no

Using this communication object, all status messages are requested.

- *yes:* A 1 bit communication object *Request status values* is enabled.
  A further parameter appears:

  Request with object value

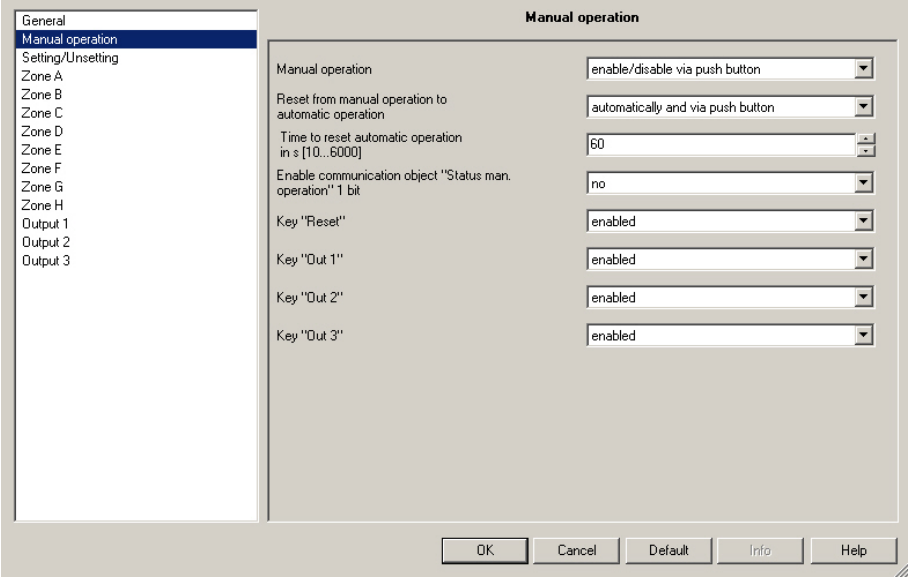
  Options: 0
  1
  0 or 1

  - *0:* Sending status messages is requested with the value 0.
  - *1:* Sending status messages is requested with the value 1.
  - *0 or 1:* Sending of the status messages is requested with the values 0 or 1.

3.3.1.1 Parameter window *Manual operation*

All the settings for manual operation are made in this parameter window.

Note
Parameter window *Manual operation* is not available for Security Terminal MT/U 2.12.2.



Function of manual operation

After connection to the bus, the device is in *KNX mode*. The LED is off. All *LEDs* indicate the actual input state. The respective *Buttons* are non-functional. It is possible to switch between *Manual operation* and *KNX operation* by pressing the button.

During manual operation, the states received via the bus are executed. The manually set states are retained if manual operation is deactivated.

Switching on manual operation:
Press button until the yellow LED lights continuously.

Switching off manual operation:
Press button until the yellow LED no longer lights.

Note
If button is released again, before 1.5 seconds have elapsed, the LED reverts to its old state and there is no reaction. If manual operation is disabled via the application program, there is no reaction and the device remains in the *KNX mode*. If manual operation has been enabled, the LED is switched on or over after it has flashed for 1.5 seconds.

Manual operation

Options: enable/disable via communication object
<u>enabled</u>
disabled

This parameter defines if the switch over between the operating states *manual operation* and *KNX operation* is enabled or disabled via the button on the device.

- enable/disable via communication object: The communication object Enable/block manual operation – Manual operation appears.

Telegram value 0 = enable button
1 = disable button

Note
The manual operation overwrites the output states.

Reset manual operation to KNX operation

Options: via push button
<u>automatically and via push button</u>

This parameter determines how long the device remains in the *Manual operation* mode after pressing the button. If the state of the communication objects has changed during manual operation, they are retained during reset of *Manual operation* to *KNX operation*.

- *via push button:* The device remains in *Manual operation* until the button is pressed again.
- *automatically and via push button* The device remains in *Manual operation* after the last button push until either button is pushed again or the programmed time has timed out.
  The parameter *Time to reset automatic operation* appears:

  Time to reset automatic operation in s [10…6000]

  Options: 1…<u>60</u>…6000

  This parameter determines the duration after which *Manual operation* is automatically reset to *KNX operation*. The automatic reset is performed after the last manual operation and after time-out of the set time.

Enable communication object "Status man. operation" 1 bit

Option: yes
<u>no</u>

- *yes:* A 1 bit communication object *Status of manual operation* is enabled. An additional parameter appears:

Send object value

Options: no, update only
<u>after a change</u>
after request
after a change or request

- *no, update only*: The status is updated but not sent (it can be read via the communication object).
- *after a change:* The status is sent after a change.
- *after request:* The status is sent after a request.
- *after a change or request:* The status is sent after a change or a request.

Reset key

Options: <u>enabled</u>
disabled

- *enabled:* The button *Reset* is enabled during manual operation, and a reset can be performed manually.
- *disabled:* The Reset button is disabled, a manual *Reset* is not possible.

Key "Out 1"

Options: <u>enabled</u>
disabled

- *enabled:* The button *Out 1* *(output 1)* is enabled and can be operated during *manual operation*.
- *disabled:* The button *Out 1* *(output 1)* is disabled. Operation using this button is not possible.

Key "Out 2"

Options: <u>enabled</u>
disabled

- *enabled:* The button *Out 2* *(output 2)* is enabled and can be operated during *manual operation*.
- *disabled:* The button *Out 2* (*output 2)* is disabled. Operation using this button is not possible.

Key "Out 3"

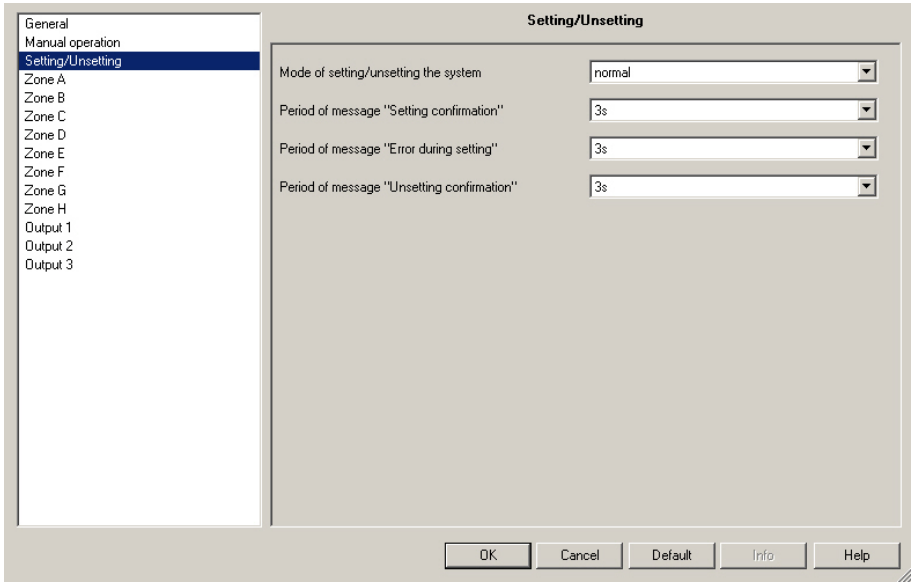
Options: <u>enabled</u>
disabled

- *enabled:* The button *Out 3* *(output 3)* is enabled and can be operated during *manual operation*.
- *disabled:* The button *Out 3* *(output 3)* is disabled. Operation using this button is not possible.

3.3.1.2 Parameter window *Setting/Unsetting*

All the settings for setting/unsetting are made in this parameter window.

Note
This parameter window is only available in the stand-alone security system operation mode. In the *with Security Module / Intrusion alarm system* operation mode, this function is adopted by the higher-level control, e.g. the Security Module or an Intrusion Alarm Panel with KNX interface.



Mode of setting/unsetting the system

Options <u>normal</u>
delayed

This parameter determines whether an external set/unset should be *normal* or *delayed*.

- *normal:* Setting is performed immediately after the request is received.
- *delayed:* The user inside the security zone starts the delay time. The user can leave the security zone within the delay time. All detectors of type *delayed* are not set during this time. A further parameter appears:

  Setting Delay in s [1…3600]

  Options: 1…<u>60</u>…3600

  This parameter determines the duration of the delay time after a setting request. The user can leave the security zone within the delay time. The system is set after the delay time has timed out.

**Alarm Delay
in s [1…3600]**

Options: 1…60…3600

This parameter defines the duration of the alarm delay. The user can enter the security zone during the alarm delay time and switch the alarm system to unset without triggering an alarm.

On triggering a delayed detector for peripheral protection when internally set

Options: start alarm delay
trigger alarm instantly

- *trigger alarm instantly:* Exterior or peripheral detectors of type *delayed* immediately trigger an alarm with an internally set system.
- *start alarm delay:* Exterior or peripheral detectors of type *delayed* start the alarm delay with internally set systems. During the alarm delay time the user has opportunity to unset the Security Terminal.

Note
A resident has internally set the system in a detached house. Depending on the setting of the parameter, a resident who returns later can enter the house normally and then unset the alarm, or the residents who are still in the vicinity must unset the system before entering the house. If the person who is present must unset the system before further persons enter from outside, protecting the door against unintentional opening, e.g. using *SafeKey* or a bolt lock, is highly recommended. Otherwise unintentional opening of the door will trigger an internal alarm.

On closing a delayed detector for peripheral protection during setting delay

Options: no reaction
set the system

- *no reaction:* Triggering a peripheral intrusion detector of type *delayed* during the delay time will not trigger a reaction, e.g. closing of an exterior door, to which a magnetic reed contact of the *delayed* type is connected, will not trigger a reaction.
- *set the system:* A state change of a peripheral intrusion detector of type *delayed* during the delay time causes immediate setting of the Security Terminal. A change of state entails, e.g. opening or closing of an exterior door fitted with a magnetic reed contact and triggering and untriggering of a peripheral detector of type *delayed*.
  A further parameter appears:

Reaction of run-out of delay period

Options: set the system
remain unset, send error message

- *set the system:* After the delay time has elapsed, the Security Terminal is set.
- *remain unset, send error message:* After the delay time has elapsed, the Security Terminal remains unset and sends an error message, if for example, a door contact has not detected a status change during the delay time (door contact has not been opened and closed again).

Period of message "Setting confirmation"

Options: 1…3…10 s

This parameter determines the time, after which the communication object *Setting confirmation* is automatically reset to the value 0.

The communication object *Setting confirmation* indicates a successful setting action to the user.

Period of message "Error during setting"

Options: 1…3…10 s

This parameter determines the time, after which the communication object *Error during setting* is automatically reset to the value 0.

The communication object *Error during setting* reports an error during the setting process, e.g. if one or more triggered detectors is detected.

Period of message "Unsetting confirmation"

Options: 1…3…10 s

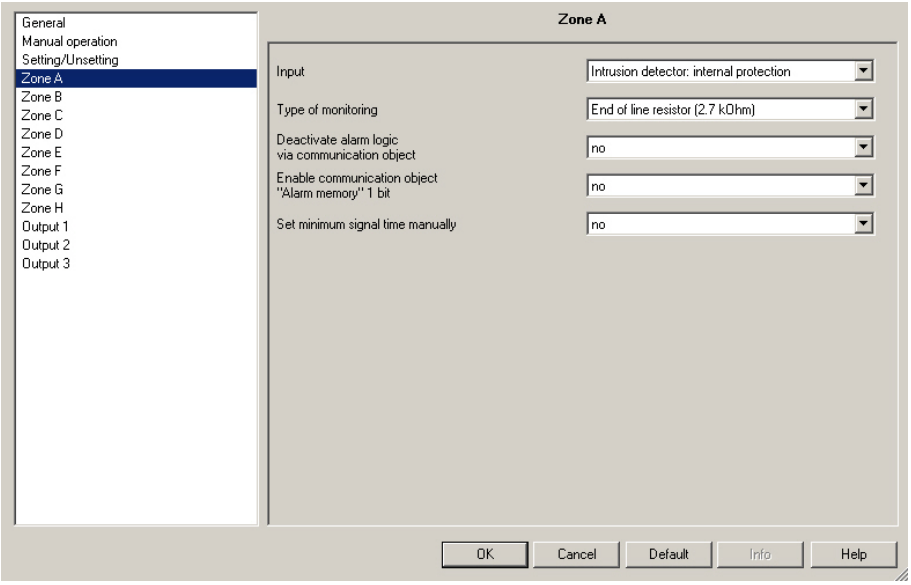
This parameter determines the time, after which the communication object *Unsetting confirmation* is automatically reset to the value 0.

The communication object *Unsetting confirmation* indicates to the user that the system has been unset successfully.

3.3.1.3 Parameter window *Zone A:*

In this parameter window, all settings for Zone A are undertaken.

Note
In the following, the setting options for *Zones A…X* are explained using the parameter window *Zone A*. The setting options are identical for all zones. Zones A…X correspond to: MT/U 2.12.2: Zones A…B MT/S 4.12.2M: Zones A…D MT/S 8.12.2M: Zones A…H



Input

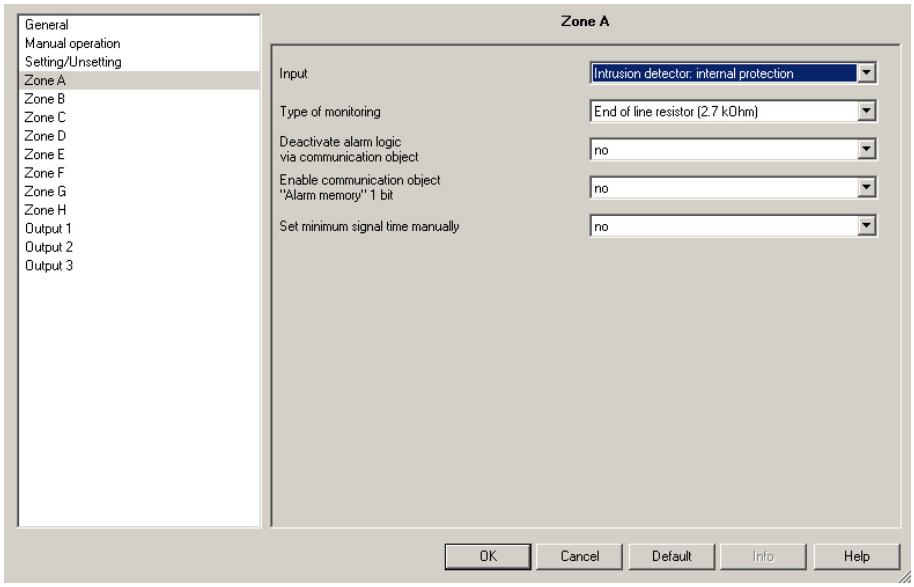
Options: <u>Intrusion detector: internal protection</u>
Intrusion detector: peripheral protection
Intrusion detector: internal protection, delayed
Intrusion detector: peripheral protection, delayed
Panic detector
Tech. alarm detector 1
Tech. alarm detector 2
Tamper contact
Lock monitoring detector
Setting/Unsetting input
Reset input

Note
The selection of the options is dependent on the parameterisation of the parameter *Mode of setting/unsetting the system* in the parameter window *Setting/Unsetting*, page S. 41. Delayed zones are only available with the selection of the option *delayed*. The parameters in this parameter window will change depending on the selection of a zone or input type. For this reason, the parameter window will be explained based on the selection options.

Important
Multiple alarm triggering from the same zone is not possible. Exception: Panic detector zone. A renewed alarm is sent each time the alarm is triggered.

3.3.1.3.1 Selection *Intrusion detector: internal protection*

In this parameter window, all settings for the *Intrusion detector: internal protection* are undertaken.



Internal detector

This zone triggers an alarm via the communication object *Intrusion alarm* and sets the communication object *External signaling device* to the value 1 when the device is **externally set**.

This setting is useful, for example, with motion detectors. They monitor a defined area of a room or hallway.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- Open circuit (N/O): Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- End of line resistor (2.7 kOhm): When monitoring with an end of line resistor both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.
  In this mode of operation an end of line resistor with 2.7 kOhm is necessary.

Deactivate alarm logic via communication object

Options: yes
no

- *yes:* The communication object *Deactivate alarm logic* is enabled. The zone alarm logic can be deactivated in this way.
  If the communication object *Deactivate alarm logic* assumes the value 1, the zone alarm logic is deactivated. In the deactivated state, the zone does not trigger an alarm when the system is set. In this way, setting of the system is not prevented.
  The communication object *Status zone* continues to be updated even though the alarm logic is deactivated.
  The zone alarm logic is reactivated via the value 0. The triggered zone thus prevents setting and triggers an alarm in the set state (depending on the input).
  If the alarm logic with the triggered zone is reconnected in the set state, an alarm message does not occur. The alarm message only occurs after the zone error has been resolved and a new alarm is triggered.
- *no:* The communication object *Deactivate alarm logic* is not enabled. The zone alarm logic cannot be deactivated. The zone is thus active.

  How does the device LED (MT/S only) respond with a deactivated zone?

  The channel LED always indicates the current state of the zone in both the unset and internally set state.

Enable communication object "Alarm memory" 1 bit

Option: yes
no

- *yes:* The communication object *Alarm memory* is enabled.
  The communication object *Alarm memory* is set to the value 1 in the set state with a triggered zone and is only reset to the value 0 after the device is reset.
- *no:* The zone only indicates its current state on the bus via the communication object *Status zone*. The alarm is stored exclusively via the channel LED (MT/S only).

  What is the alarm memory?

  When an alarm is triggered, it is important to be able to trace the detector or zone that has been activated. For example, the path of an intruder can be reconstructed in this way.

  The alarm memory ensures that the triggered zone cannot reset itself on alarm. The alarm memory can only be deleted when the device is reset via the communication object *Reset*. The alarm memory is indicated by flashing of the corresponding channel LED on the device and additionally via the communication object *Alarm memory* if enabled.

Set minimum signal time manually

Option: yes
no

Then minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

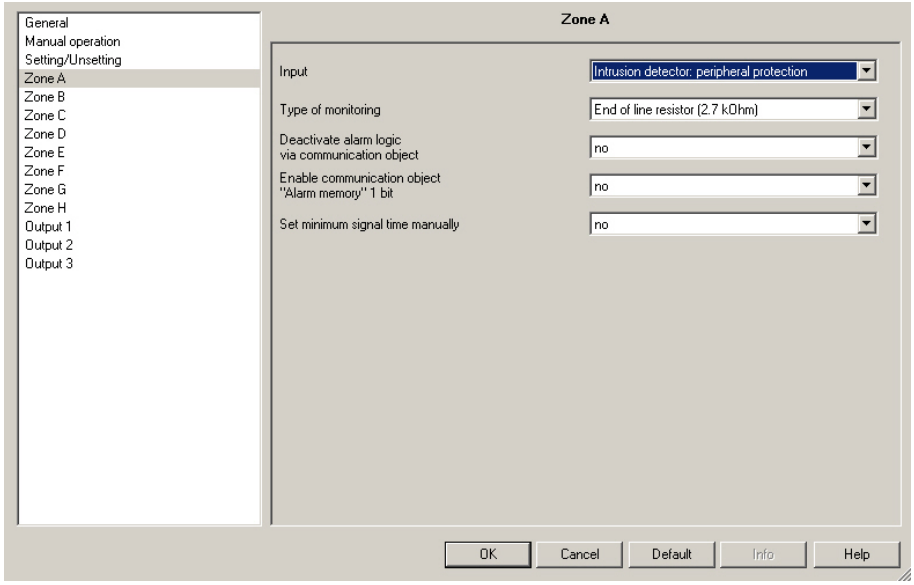
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.2 Selection *Intrusion detector: peripheral protection*

In this parameter window, all settings for the *Intrusion detector: peripheral protection* are undertaken.



Peripheral detector

This zone causes an **Intrusion alarm in the externally or internally set state** when triggered. The communication object *External signaling device* is set to value 1 in the externally set state, and the communication object *Internal signaling device* is set to value 1 in the internally set state.

This setting is useful, for example, with glass break detectors or magnetic contacts. The monitoring openings of a building, e.g. windows or doors.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm)

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- Open circuit (N/O): Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- End of line resistor (2.7 kOhm): When monitoring with an end of line resistor, both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.
  In this mode of operation, an end of line resistor with 2.7 kOhm is necessary.

Deactivate alarm logic via communication object

Options: yes
no

- *yes:* The communication object *Deactivate alarm logic* is enabled. The zone alarm logic can be deactivated in this way.
  If the communication object *Deactivate alarm logic* assumes the value 1, the zone alarm logic is deactivated. In the deactivated state, the zone does not trigger an alarm when the system is set. In this way, setting of the system is not prevented.
  The communication object *Status zone* continues to be updated even though the alarm logic is deactivated.
  The zone alarm logic is reactivated via the value 0. The triggered zone thus prevents setting and triggers an alarm in the set state (depending on the input).
  If the alarm logic with the triggered zone is reconnected in the set state, an alarm message does not occur. The alarm message only occurs after the zone error has been resolved and a new alarm is triggered.
- *no:* The communication object *Deactivate alarm logic* is not enabled. The zone alarm logic cannot be deactivated. The zone is thus active.

  How does the device LED (MT/S only) respond with a deactivated zone?

  The channel LED always indicates the current state of the zone in both the unset and internally set state.

Enable communication object "Alarm memory" 1 bit

Option: yes
no

- *yes:* The communication object *Alarm memory* is enabled.
  The communication object *Alarm memory* is set to the value 1 in the set state with a triggered zone and is only reset to the value 0 after the device is reset.
- *no:* The zone only indicates its current state on the bus via the communication object *Status zone*. The alarm is stored exclusively via the channel LED (MT/S only).

  What is the alarm memory?

  When an alarm is triggered, it is important to be able to trace the detector or zone that has been activated. For example, the path of an intruder can be reconstructed in this way.

  The alarm memory ensures that the triggered zone cannot reset itself on alarm. The alarm memory can only be deleted when the device is reset via the communication object *Reset*. The alarm memory is indicated by flashing of the corresponding channel LED on the device and additionally via the communication object *Alarm memory* if enabled.

Set minimum signal time manually

Option: yes
no

The minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

Options: 1…10…255

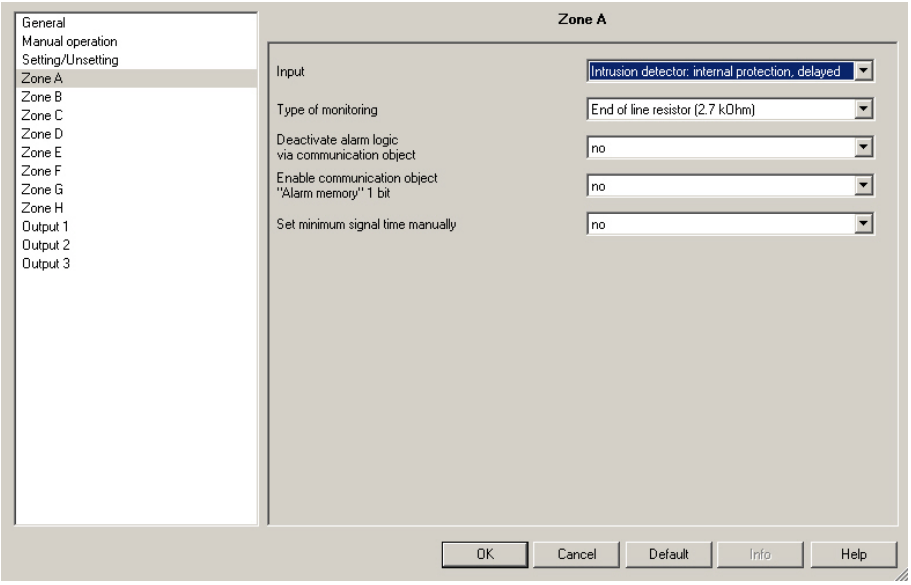
This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.3 Selection *Intrusion detector: internal protection, delayed*

In this parameter window, all settings for the *Intrusion detector: internal protection* are undertaken.

Note
The option *Intrusion detector: internal protection, delayed* can only be selected in conjunction with delayed setting.



Intrusion detector: internal protection, delayed

This zone should be used in conjunction with delayed setting. If this zone is triggered in the externally set state, the *Alarm delay* is activated. After the *Alarm delay* has elapsed, the communication objects *Intrusion alarm* and *External signalling device* are set to the value 1. No alarm occurs if the device is unset during the *Alarm delay*.

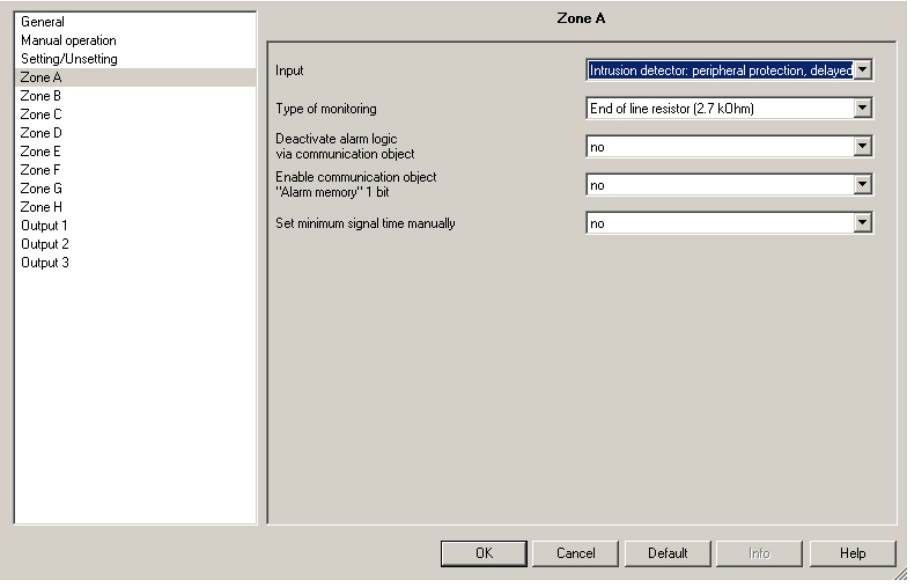
This setting is useful, for example, with motion detectors in the delayed setting zone.

Note
The setting possibilities for *Intrusion detector: internal protection, delayed* do not differentiate from those for *Intrusion detector: internal protection*. The descriptions of the parameter setting options and adjustable communication objects for the *Intrusion detector: internal protection, delayed* are described under *Selection Intrusion detector*, page 46.

3.3.1.3.4 Selection *Intrusion detector: peripheral protection, delayed*

In this parameter window, all settings for the *Intrusion detector: peripheral protection, delayed* are undertaken.

Note
The option *Intrusion detector: peripheral protection, delayed* can only be selected in conjunction with delayed setting.



Intrusion detector: peripheral protection, delayed

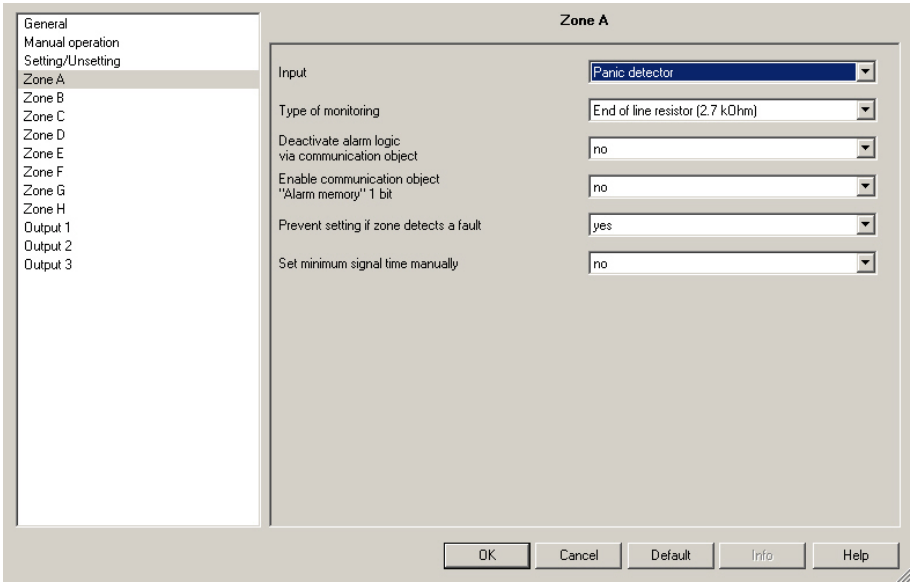
This zone should be used in conjunction with delayed setting. If this zone is triggered in the internally or externally set state, the *Alarm delay* is activated. After the *Alarm delay* has elapsed, the communication objects *Intrusion alarm* and *Internal signaling device* or *External signaling device* are set to the value 1 (depending on the method of setting). No alarm occurs if the device is unset during the *Alarm delay*. During **internal setting** the *Intrusion detector: peripheral protection* of type *delayed* can also issue an alarm **immediately**, see On triggering a delayed detector for peripheral protection when internally set, page 42.

This setting is useful, for example, with window and door contacts in the delayed setting zone.

Note
The setting possibilities for *Intrusion detector: peripheral protection, delayed* do not differentiate from those for *Intrusion detector: peripheral protection*. The descriptions of the parameter setting options and adjustable communication objects for the *Intrusion detector: peripheral protection, delayed* are described under *Selection Intrusion detector: peripheral protection*, page 49.

3.3.1.3.5 Selection *Panic detector*

In this parameter window, all settings for the *Panic detector* are undertaken.



Panic detector

If this zone is triggered, the communication object *Panic alarm* is set to the value 1 regardless of the state of the device.

This setting is useful, for example, for sending a silent alarm during an attack.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm)

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- Open circuit (N/O): Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- End of line resistor (2.7 kOhm): When monitoring with an end of line resistor, both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.
  In this mode of operation, an end of line resistor with 2.7 kOhm is necessary.

Deactivate alarm logic via communication object

Options: yes
no

- *yes:* The communication object *Deactivate alarm logic* is enabled. The zone alarm logic can be deactivated in this way.
  If the communication object *Deactivate alarm logic* assumes the value 1, the zone alarm logic is deactivated. In the deactivated state, the zone does not trigger an alarm when the system is set. In this way, setting of the system is not prevented.
  The communication object *Status zone* continues to be updated even though the alarm logic is deactivated.
  The zone alarm logic is reactivated via the value 0. The triggered zone thus prevents setting and triggers an alarm in the set state (depending on the input).
  If the alarm logic with the triggered zone is reconnected in the set state, an alarm message does not occur. The alarm message only occurs after the zone error has been resolved and a new alarm is triggered.
- *no:* The communication object *Deactivate alarm logic* is not enabled. The zone cannot be deactivated. The zone is thus active.

  How does the device LED (MT/S only) respond with a deactivated zone?

  The channel LED always indicates the current state of the zone in both the unset and internally set state.

Enable communication object "Alarm memory" 1 bit

Option: yes
no

- *yes:* The communication object *Alarm memory* is enabled.
  The communication object *Alarm memory* is set to the value 1 in the set state with a triggered zone and is only reset to the value 0 after the device is reset.
- *no:* The zone only indicates its current state on the bus via the communication object *Status zone*. The alarm is stored exclusively via the channel LED (MT/S only).

  What is the alarm memory?

  When an alarm is triggered, it is important to be able to trace the detector or zone that has been activated. For example, the path of an intruder can be reconstructed in this way.

  The alarm memory ensures that the triggered zone cannot reset itself on alarm. The alarm memory can only be deleted when the device is reset via the communication object *Reset*. The alarm memory is indicated by flashing of the corresponding channel LED on the device and additionally via the communication object *Alarm memory* if enabled.

Prevent setting if zone detects a fault

Option: yes
no

- *yes:* The triggered zone of type *panic detector* prevents internal and external setting. The communication objects *Ready to set (internally)* and *Ready to set (externally)* are set to the value 0 when the detector circuit is triggered.
- *no:* The triggered zone of type *panic detector* does not prevent internal and external setting.

Set minimum signal time manually

Option: yes
no

Then minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

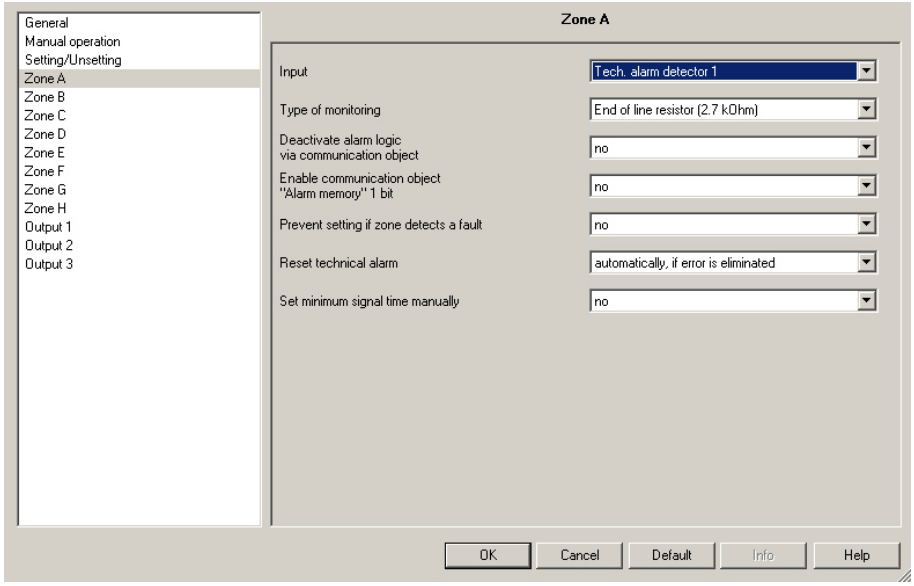
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.6 Selection *Technical alarm detector 1*

In this parameter window, all settings for technical alarm detector 1 are undertaken.



Tech. alarm detector 1

The communication object *Technical alarm* is set to the value 1 with a triggered detector. The communication object *Internal signaling device* is also set to the value 1 in the unset and internally set state of the device.

This setting is useful, for example, for water detectors.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm)

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- Open circuit (N/O): Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- End of line resistor (2.7 kOhm): When monitoring with an end of line resistor both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.
  In this mode of operation, an end of line resistor with 2.7 kOhm is necessary.

Deactivate alarm logic via communication object

Options: yes
no

- *yes:* The communication object *Deactivate alarm logic* is enabled. The zone alarm logic can be deactivated in this way.
  If the communication object *Deactivate alarm logic* assumes the value 1, the zone alarm logic is deactivated. In the deactivated state, the zone does not trigger an alarm when the system is set. In this way, setting of the system is not prevented.
  The communication object *Status zone* continues to be updated even though the alarm logic is deactivated.
  The zone alarm logic is reactivated via the value 0. The triggered zone thus prevents setting and triggers an alarm in the set state (depending on the input).
  If the alarm logic with the triggered zone is reconnected in the set state, an alarm message does not occur. The alarm message only occurs after the zone error has been resolved and a new alarm is triggered.
- *no:* The communication object *Deactivate alarm logic* is not enabled. The zone alarm logic cannot be deactivated. The zone is thus active.

  How does the device LED (MT/S only) respond with a deactivated zone?

  The channel LED always indicates the current state of the zone in both the unset and internally set state.

Enable communication object "Alarm memory" 1 bit

Option: yes
no

- *yes:* The communication object *Alarm memory* is enabled.
  The communication object *Alarm memory* is set to the value 1 in the set state with a triggered zone and is only reset to the value 0, after the device is reset.
- *no:* The zone only indicates its current state on the bus via the communication object *Status zone*. The alarm is stored exclusively via the channel LED (MT/S only).

  What is the alarm memory?

  When an alarm is triggered, it is important to be able to trace the detector or zone that has been activated. For example, the path of an intruder can be reconstructed in this way.

  The alarm memory ensures that the triggered zone cannot reset itself on alarm. The alarm memory can only be deleted when the device is reset via the communication object *Reset*. The alarm memory is indicated by flashing of the corresponding channel LED on the device and additionally via the communication object *Alarm memory* if enabled.

Prevent setting if zone detects a fault

Option: yes
no

- *yes:* The triggered zone of type *Tech. alarm detector 1* prevents internal and external setting. The communication objects *Ready to set (internally)* and *Ready to set (externally)* are set to the value 0 when the detector circuit is triggered.
- *no:* The triggered zone of type *Tech. alarm detector 1* does not prevent internal and external setting.

Reset technical alarm

Options: automatically, if error is eliminated
via reset

- *automatically, if error is eliminated:* The communication object *Technical alarm* is automatically reset, after the cause has been remedied, e.g. water leak has been fixed.
- *via reset:* The alarm is displayed until it is remedied and a manual reset of the device has been performed.

Set minimum signal time manually

Option: yes
no

The minimum signal duration time of the zone can be set manually. The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

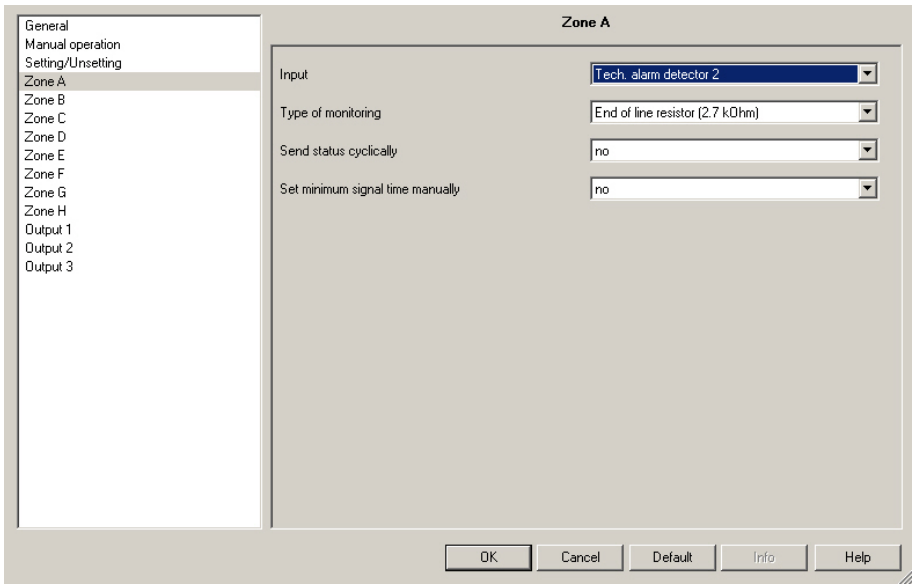
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at it's default value of 100 ms.

3.3.1.3.7 Selection *Technical alarm detector 2*

In this parameter window, all settings for technical alarm detector 2 are undertaken.



Tech. alarm detector 2

Triggering of this detector does not lead to an alarm in any case. Only the current state is indicated via the communication object *Status zone*.

This setting is useful, for example, for technical detectors that should only provide information concerning the current status, e.g. sensors for filling levels.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- Open circuit (N/O): Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- End of line resistor (2.7 kOhm): When monitoring with an end of line resistor both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.
  In this mode of operation, an end of line resistor with 2.7 kOhm is necessary.

Send status cyclically

Option: yes
no

Cyclic sending of the zone is activated using this parameter.

- *no:* The communication object *Status zone x* now indicates the current state of the zone.
- *yes:* The communication object *Status zone x* is sent cyclically on the bus. The rate of telegram repetition can be set through the following parameter that is now enabled:

  Telegram repeated every ...
  in s [8...3600]

  Options: 8…60…3600

  The time interval that communication object *Status zone x* uses to cyclically send is set.

Set minimum signal time manually

Option: yes
no

Then minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

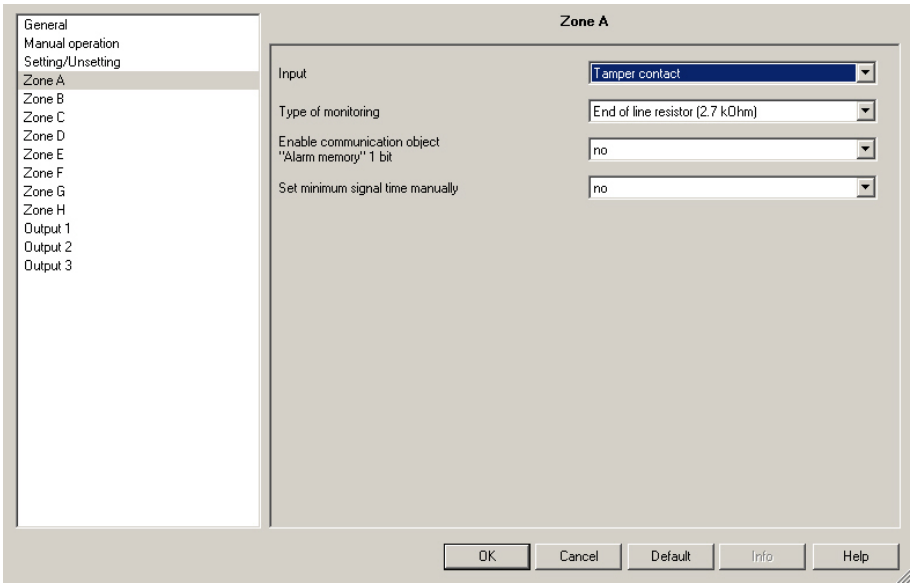
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.8 Selection *Tamper contact*

In this parameter window, all settings for the *Tamper contact* are undertaken.



Tamper contact

The triggered tamper contact causes a *Tamper alarm* regardless of the state of the device and the communication object *Tamper alarm* is set to the value 1. In the unset and internally set state, the communication object *Internal signaling device* is set to the value 1.
In the externally set state, the communication object *External signaling device* is set to the value 1.

This setting is useful for the detection of manipulation attempts on the system.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm)

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- Open circuit (N/O): Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- End of line resistor (2.7 kOhm): When monitoring with an end of line resistor both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.

In this mode of operation an end of line resistor with 2.7 kOhm is necessary.

Enable communication object "Alarm memory" 1 bit

Option: yes
no

- *yes:* The communication object *Alarm memory* is enabled.
  The communication object *Alarm memory* is set to the value 1 in the set state with a triggered zone and is only reset to the value 0 after the device is reset.
- *no:* The zone only indicates its current state on the bus via the communication object *Status zone*.
  The alarm is stored exclusively via the channel LED (MT/S only).

What is the alarm memory?

When an alarm is triggered, it is important to be able to trace the detector or zone that has been activated. For example, the path of an intruder can be reconstructed in this way.

The alarm memory ensures that the triggered zone cannot reset itself on alarm. The alarm memory can only be deleted when the device is reset via the communication object *Reset*. The alarm memory is indicated by flashing of the corresponding channel LED on the device and additionally via the communication object *Alarm memory* if enabled.

Set minimum signal time manually

Option: yes
no

Then minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

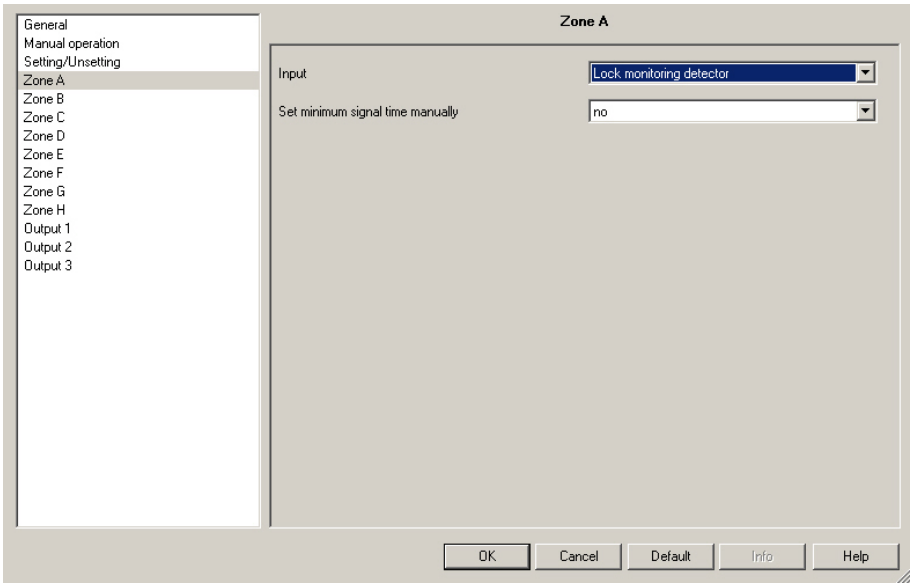
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.9 Selection *Lock monitoring detector*

In this parameter window, all settings for the *Lock monitoring detector* are undertaken.



Lock monitoring detector

This zone prevents internal and external setting of the system when it is triggered (contact opened). The lock monitoring detector does not trigger an alarm in any case.

This setting is useful, for example, when using a lock bolt switching contact.

Set minimum signal time manually

Option: yes
<u>no</u>

The minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: <u>10 ms</u>/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

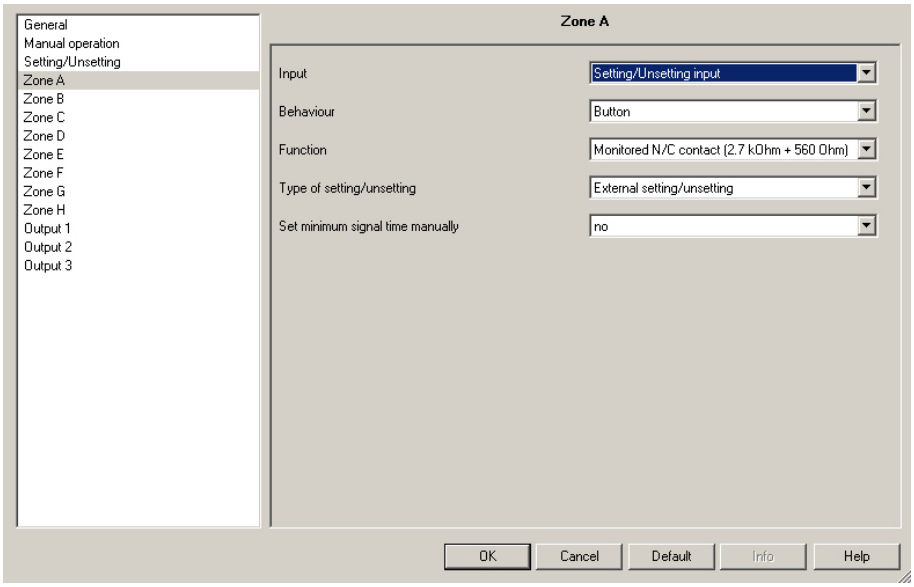
Options: 1…<u>10</u>…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.10 Selection *Setting/Unsetting input*

In this parameter window, all settings for the *Setting/Unsetting input* are undertaken.



Setting/Unsetting input

The Setting/Unsetting input can be used to internally or externally set the Security Terminal.

This setting is useful, for example, when using a setting device.

Behaviour

Options: Button
Switch

This parameter determines the behaviour of the setting input.

- *Push buttons:* The Security Terminal is set/unset with each actuation.
- *Switch:* The Security Terminal remains set/unset until the next switch action.

Function

Options: Normally closed (falling edge)
Normally opened (rising edge)
Monitored N/C contact (2.7 kOhm + 560 Ohm)

This parameter defines the behaviour of the setting input.

- *Normally closed (falling edge):* This option should be selected if a normally closed contact is connected to the setting/unsetting input. By using a pushbutton, the state will change each time the button is pressed. When a switch is used, the Security Terminal reacts to the position of the contact:
  1. contact closed: unset
  2. contact open: set
- *Normally opened (rising edge):* This option should be selected if a normally opened contact is connected to the setting/unsetting input.

By using a pushbutton, the state will change each time the button is pressed. When a switch is used, the Security Terminal reacts to the position of the contact:
1. contact open: unset
2. contact closed: set

- M*onitored N/C contact (2.7 kOhm + 560 Ohm):* This option should be selected if the setting/unsetting input should be monitored for open circuit or short-circuit. Here both resistors (2.7 kOhm and 560 Ohm) are to be connected in series. The pushbutton or switch (each of them N/C contacts) must be switched parallel to the 560 Ohm resistor.

  When a pushbutton is used, the Security Terminal changes the state (the state of the system is changed with the resistance value 2.7 kOhm + 560 Ohm) each time the pushbutton (falling edge) is pressed.

  When using a switch, the state of the Security Terminal changes when closing and opening a contact.
  When the contact is closed, the system is unset (resistance value 2.7 kOhm). If the contact is opened, the system is set (resistor value 2.7 kOhm and 560 Ohm).

  If the setting/Unsetting input is open circuit or short-circuit (tampering), the communication object values *Tamper alarm setting device* and *Tamper alarm* are set to value 1. Tampering detection occurs immediately, irrespective of the set minimum signal duration.

Note
Should several setting/unsetting inputs be used, it is recommended that setting/unsetting devices with pushbutton responses are used and to take this into consideration in the parameterisation.

Type of setting/unsetting

Options: Internal setting/unsetting
External setting/unsetting

This parameter determines the type of setting/unsetting (internal/external) that should be used via the setting/unsetting input.

- *Internal setting/unsetting:* The Security Terminal is set or unset **internally** by the setting/unsetting input.
- *External setting/unsetting:* The Security Terminal is set or unset **externally** by the setting/unsetting input.

Set minimum signal time manually

Option: yes
no

The minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

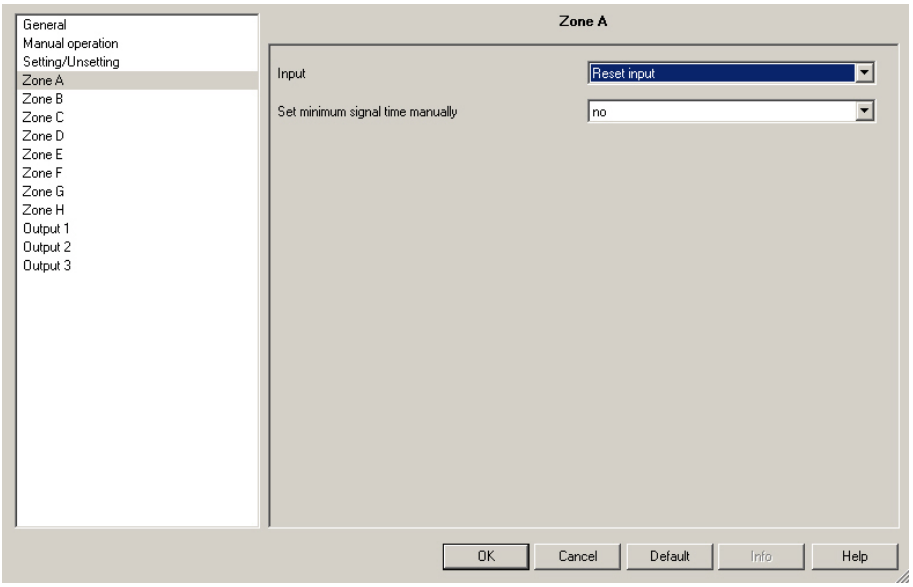
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.3.11 Selection *Reset input*

In this parameter window, all settings for the *Reset input* are undertaken.



Reset input

The reset input is used for resetting the Security Terminal using a pushbutton or switch. A reset request occurs by applying a short-circuit to the reset input.

Set minimum signal time manually

Option: yes
no

The minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

Options: 1…10…255

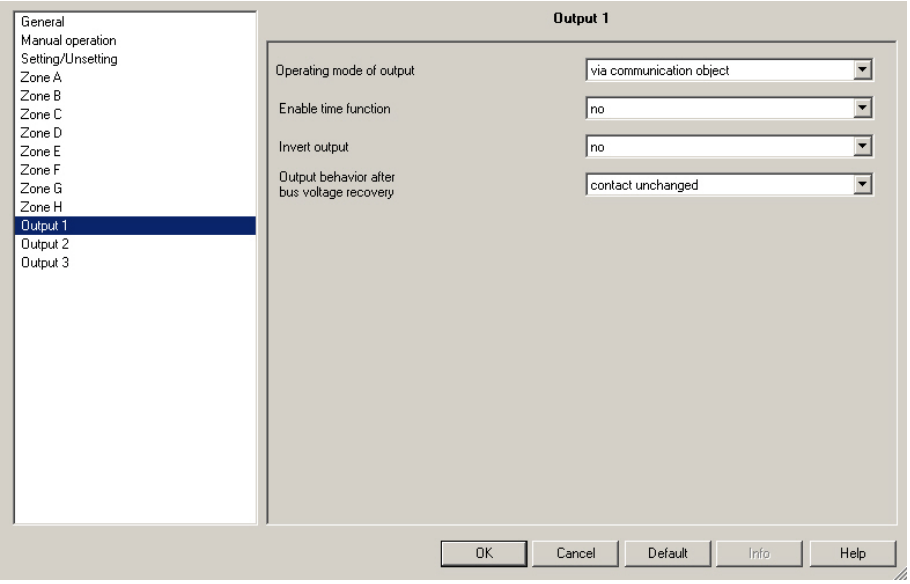
This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.1.4 Parameter window *Output 1*

In this parameter window, all settings for Output 1 are undertaken.

Note
In the following, the setting options for *Outputs 1…X* are explained using the parameter window *Output 1*. The setting possibilities are identical for all outputs. Outputs 1…X correspond to: MT/U 2.12.2: Output 1…2 MT/S 4.12.2M: Output 1…3 MT/S 8.12.2M: Output 1…3



Note
Depending on the mode selected for the output as well as the enabled time functions, the available parameters will change as follows: • *via device state:* The parameter *Output behavior after bus voltage recovery* is not available. • *Enable time function* set to *yes*: The parameter *Invert output* and *Output behavior after bus voltage recovery* are not available.

Operating mode of output

Options: no function
via communication object
via device state

- *No function:* The output is switched off. The communication objects *Switch* and *Status* are not visible, and all parameters are hidden.
- *via communication object:* The output is switched on and off via the communication object *Switch*. With the value 1 the contact is closed, and with the value 0 the contact is opened; the reverse is the case when inverted. Other parameters appear:

Enable time function

Option: yes
no

- *yes:* The time function is enabled. Other parameters appear:

  Time for ON in 0.1 s [4...65.535]

  Options: 4…10…65.535

  The switch on duration of the output is set here.

  Time for OFF in 0.1 s [4...65.535]

  Options: 4…10…65.535

  The switch off duration of the output is set here.

  Number of ON-impulses [1…255]

  Options: 1…255

  The number of impulses for the time function is set here, i.e., the number of times the time function is performed is set. Note: The time function is interrupted after the change of status independently of the set number of impulses.

  Start time function if "switching" is

  Options: ON (1)
  OFF (0)
  ON (1) or OFF (0)

  This parameter determines the communication object value at which the time function is performed.

- *no:* The time function is not enabled. The following parameters appear:

  Invert output

  Options: yes
  no

  - *yes:* The value of the output is inverted.
  - *no:* The value of the output is not inverted.

  Output behavior after bus voltage recovery

  Options: contact open
  contact closed
  contact unchanged

  It is possible to set if the output should be *off* (contact open), *on* (contact closed) or *unchanged* after bus voltage recovery.

  - *via device state:* The output reacts to the current status information. The communication object *Switch* is not visible. Other parameters appear:

Select device state

Options: Unset
Ready to set (internally)
Ready to set (externally)
Delay time is active*
Error during setting
Internally set
Externally set
Intrusion alarm
Panic alarm
Technical alarm
Tamper alarm
Internal signaling device
External signaling device
Reset
Auxiliary supply voltage o.k.

*only with delayed setting

By selecting different status information, the device status can be displayed on the output. The communication object *Status* assumes the value of the selected status message.

Example
Communication object *Internal set* has the value 1 → communication object *Status* assumes the value 1.

Enable time function

Option: yes
no

- *yes:* The time function is enabled. Other parameters appear:

  Time for ON in 0.1 s [4...65.535]

  Options: 4…10…65.535

  The switch on duration of the output is set here.

  Time for OFF in 0.1 s [4...65.535]

  Options: 4…10…65.535

  The switch off duration of the output is set here.

  Number of ON-impulses [1…255]

  Options: 1…255

  The number of impulses for the time function is set here, i.e., the number of times the time function is performed is set.

Note
The time function is interrupted after the change of status independently of the set number of impulses.

- *no:* The time function is not enabled.
  The following parameter appears:

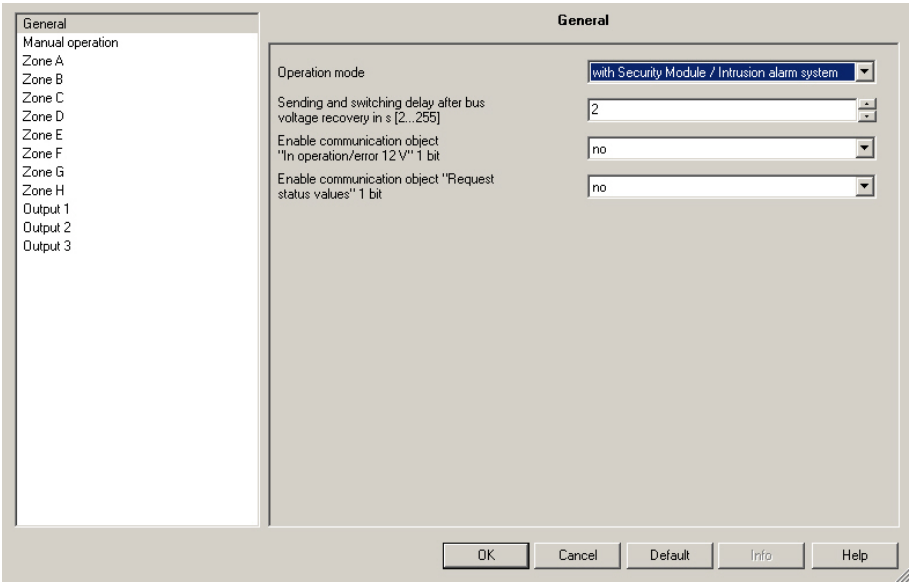
Invert output

Options: yes
no

- *yes:* The contact position is inverted (normally closed).
- *no:* The contact position is not inverted (normally opened).

3.3.2 Operation mode *with Security Module / Intrusion alarm system*

In parameter window *General*, the higher-level parameters can be set for the respective operating mode.



Sending and switching delay after bus voltage recovery in s [2…255]

Options: 2…255

Telegrams are only received during the send and switching delay. The telegrams are not processed however, and the outputs remain unchanged. No telegrams are sent on the bus.

After the sending and switching delay, telegrams are sent, and the state of the outputs is set to correspond to the parameterisation or the communication object values.

If communication objects are read during the sending and switching delay, e.g. by a visualisation system, these read requests are stored, and a response is sent, after the send and switching delay has been completed.

An initialisation time of about two seconds is included in the delay time. The initialisation time is the time that the processor requires to be ready to function.

How does the device behave with bus voltage recovery?

After bus voltage recovery, the device always waits for the send delay time to elapse before sending telegrams on the bus.

Enable communication object "In operation/error 12 V" 1 bit

Option: yes
no

- *yes:* The communication object In operation/error 12 V is enabled. It indicates the availability of the 12 V DC auxiliary voltage. Normally the communication object has the value 0 and the value 1 in the event of a fault. Furthermore, this communication object is used for

cyclic monitoring of the device. At bus voltage failure, this information can be received, for example, from a monitoring module.

- *no:* The communication object In operation/error 12 V is not enabled.

With option *yes* the following parameters appear:

Send object value

Options: not cyclical: 0 = OK, 1 = Error
not cyclical: 1 = OK, 1 = Error
cyclical: 0 = OK, 1 = Error
cyclical: 1 = OK, 0 = Error

This parameter defines which communication object value is sent cyclically or non-cyclically on the bus.

The following parameter appears should the communication object value be sent cyclically:

Telegram repeated every ...
in s [1...65,535]

Options: 1…60…65,535

This parameter defines the interval at which the communication object *In operation/error 12 V* is cyclically sent.

Enable communication object
"Request status values" 1 bit

Options: yes
no

Using this communication object, all status messages are requested.

- *yes:* A 1 bit communication object *Request status values* is enabled.
  A further parameter appears:

Request with object value

Options: 0
1
0 or 1

- *0:* Sending status messages is requested with the value 0.
- *1:* Sending status messages is requested with the value 1.
- *0 or 1:* Sending of the status messages is requested with the values 0 or 1.

3.3.2.1 Parameter window *Manual operation*

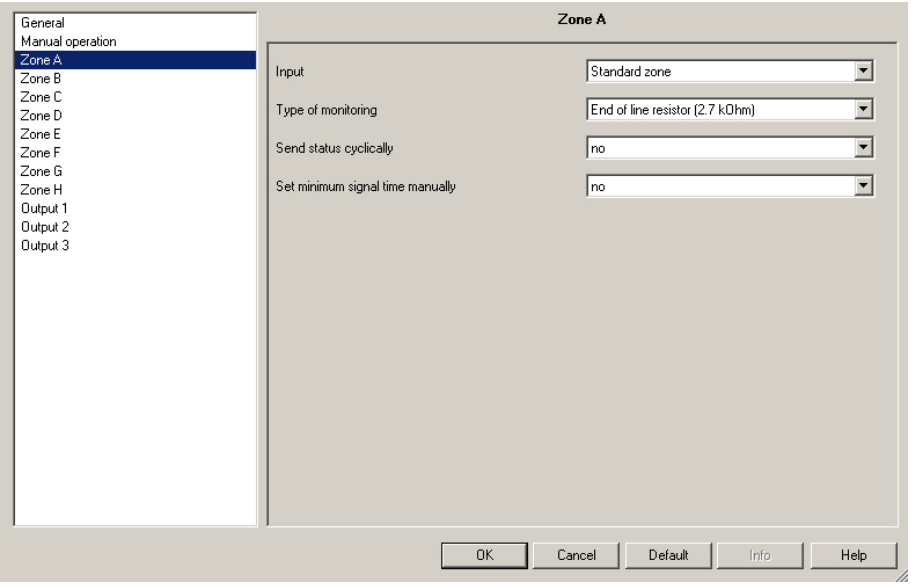
Manual operation in the *with Security Module / Intrusion alarm system* operation mode does not differ from the *stand-alone security system* operation mode.

The description for the parameter setting possibilities and the adjustable communication objects can be found under parameter window *Manual operation*, page 37.

3.3.2.2 Parameter window *Zone A:*

In this parameter window, all settings for Zone A are undertaken.

Note
In the following, the setting options for *Zones A…X* are explained using the parameter window *Zone A*. The setting options are identical for all zones. Zones A…X correspond to: MT/U 2.12.2: Zone A…B MT/S 4.12.2M Zone A…D MT/S 8.12.2M Zone A…H



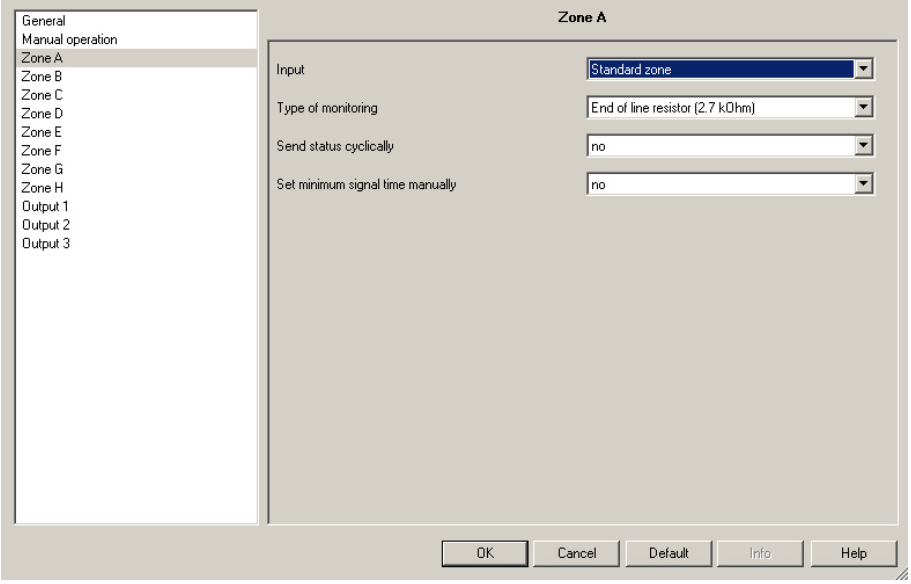
Input

Options: Standard zone
Setting/Unsetting input

Note
The parameters in this parameter window will change depending on the input type selection. For this reason, the parameter window will be explained based on the selection options.

3.3.2.2.1 Selection *Standard zone*

In this parameter window, all settings for a standard zone are undertaken.



Standard zone

The standard zone can be used for all types of detectors. All commercially available security technology detectors as well as floating contacts in applications with enhanced security requirements can be connected to the zone.

Type of monitoring

Options: Closed circuit (N/C)
Open circuit (N/O)
End of line resistor (2.7 kOhm)

This parameter defines the type of monitoring. A differentiation is made between three different types of monitoring:

- *Closed circuit (N/C)*: Only **normally closed** contacts can be monitored with closed circuit monitoring, e.g. magnetic contacts. The zone is monitored for an **interruption** or **open circuit**. An end of line resistor is not required in this operation mode.
- *Open circuit (N/O):* Only **normally opened** contacts can be monitored with open circuit monitoring, e.g. glass break sensors. The zone is monitored for **short-circuits** using current detection. An end of line resistor is not required in this operation mode.
- *End of line resistor (2.7 kOhm):* When monitoring with an end of line resistor both **normally closed** as well as **normally opened** contacts can be monitored. The zone is monitored for **interruption** or **a short-circuit** by ensuring that a fixed threshold is not undershot or overshot.
  In this mode of operation, an end of line resistor with 2.7 kOhm is necessary.

Send status cyclically

Options: yes
no

Cyclic sending of the zone is activated using this parameter.

- *no:* The communication object *Status zone X* now indicates the current state of the zone.
- *yes:* The communication object *Status zone X* is sent cyclically on the bus. The following parameter appears:

Telegram repeated in s [8…3600]

Options: 8…60…3600

The time interval that communication object *Status zone X* uses to cyclically send is set.

Set minimum signal time manually

Option: yes
no

The minimum signal duration time of the zone can be set manually.
The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: 10 ms/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

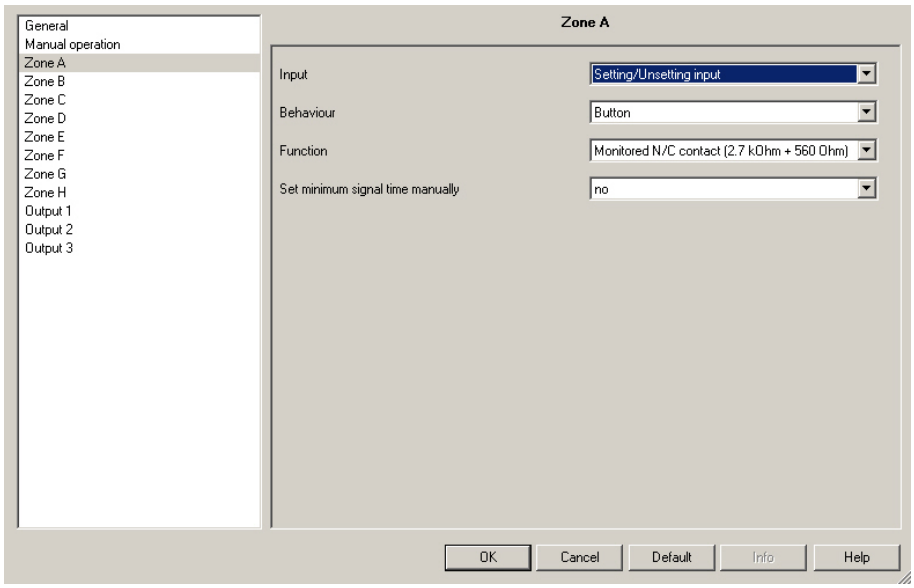
Options: 1…10…255

This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.2.2.2 Selection *Setting/Unsetting input*

In this parameter window, all settings for the *Setting/Unsetting input* are undertaken.



Setting/Unsetting input

The setting/unsetting input can be used for sending a set/unset request.

This setting is useful, for example, when using a setting device.

Behaviour

Options: Button
Switch

This parameter determines the behaviour of the setting input.

- *Push buttons:* The communication object *Set/Unset request* is changed with every actuation.
- *Switch:* The communication object value *Set/Unset request* remains are the corresponding set value until the next switching process.

Function

Options: Normally closed (falling edge)
Normally opened (rising edge)
Monitored N/C contact (2.7 kOhm + 560 Ohm)

This parameter defines the behaviour of the setting input.

- *Normally closed (falling edge):* This option should be selected if a normally closed contact is connected to the setting/unsetting input. By using a pushbutton, the communication object value will change each time the button is pressed.
  At bus voltage recovery or with a new start of the device, the communication object value *Set/Unset request* has the value 0. If a switch is used, the communication object value *Set/Unset request* with a closed contact has the value 0 and at an open contact has the value 1.

- *Normally opened (rising edge):* This option should be selected if a normally opened contact is connected to the setting/unsetting input. By using a pushbutton, the communication object value will change each time the button is pressed.
  At bus voltage recovery or with a new start of the device, the communication object value *Set/Unset request* has the value 0. If a switch is used, the communication object value *Set/Unset request* with an opened contact has the value 0 and with a closed contact has the value 1.
- *Monitored N/C contact (2.7 kOhm + 560 Ohm):* This option should be selected if the setting/unsetting input should be monitored for open circuit or short-circuit. Here both resistors (2.7 kOhm and 560 Ohm) are to be connected in series. The pushbutton or switch (each of them N/C contacts) must be switched parallel to the 560 Ohm resistor.

  By using a pushbutton, the communication object value will change each time the button is pressed (the communication object value is changed with resistance value 2.7 kOhm + 560 Ohm).

  When using a switch, the communication object value changes when closing and opening a contact. If the contact is closed, the communication object is set to the value 0 (resistance value 2.7 kOhm). If the contact is opened, the communication object is set to the value 1 (resistance value 2.7 kOhm and 560 Ohms).

  If the setting/Unsetting input is open circuit or short-circuit (tampering), the communication object values *Tamper alarm setting device* and *Tamper alarm* are set to value 1. Tampering detection occurs immediately, irrespective of the set minimum signal duration.

Note
Should several setting/unsetting inputs be used, it is recommended that setting/unsetting devices with pushbutton responses are used and to take this into consideration in the parameterisation.

Set minimum signal time manually

Option: yes
<u>no</u>

Then minimum signal duration time of the zone can be set manually. The minimum signal duration time is set by default to 100 ms to prevent triggering of false alarms.

With option *yes* the following parameters appear:

Time base

Options: <u>10 ms</u>/100 ms/1 s/10 s/1 min

This parameter determines the time basis for the desired minimum signal duration.

Factor

Options: 1…<u>10</u>…255

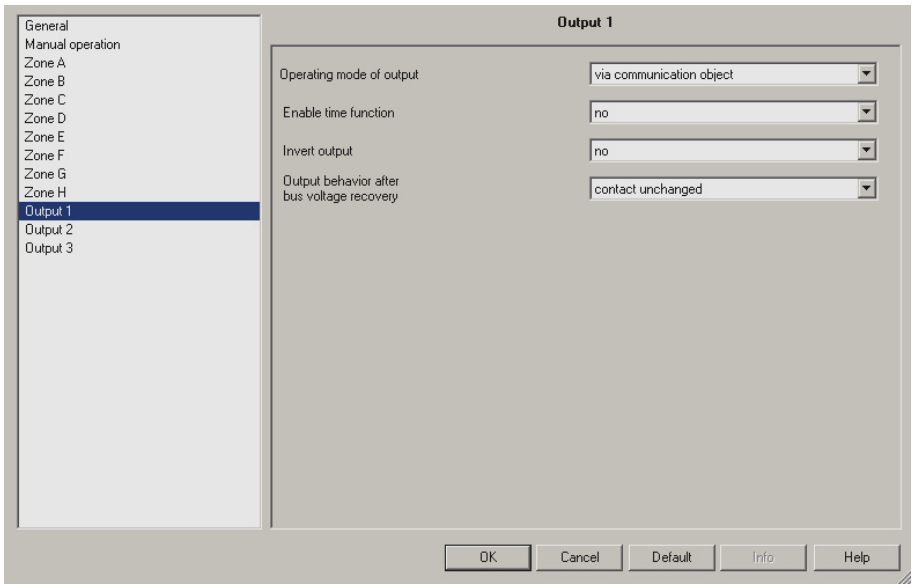
This parameter determines the multiplication factor for the time basis.

- *no:* The minimum signal time remains at its default value of 100 ms.

3.3.2.3 Parameter window *Output 1*

In this parameter window, all settings for Output 1 are undertaken.

Note
In the following, the setting options for *Outputs 1…X* are explained using the parameter window *Output 1*. The setting possibilities are identical for all outputs. Outputs 1…X correspond to: MT/U 2.12.2: Output 1…2 MT/S 4.12.2M: Output 1…3 MT/S 8.12.2M: Output 1…3



Note
The available parameters change as follows depending on the selection of the time function: • *Enable time function* set to *yes*: The parameters *Invert output* and *Output behavior after bus voltage recovery* are <u>not</u> available.

Operating mode of output

Options: <u>no function</u>
via communication object

- *No function:* The output is switched off. The communication objects *Switch* and *Status* are not visible, and all parameters are hidden.
- *via communication object:* The output is switched on and off via the communication object *Switch*. With the value 1 the contact is closed, and with the value 0 the contact is opened; the reverse is the case when inverted. Other parameters appear:

Enable time function

Option: yes
no

- *yes:* The time function is enabled. Other parameters appear:

  Time for ON in 0.1 s [4...65.535]

  Options: 4…10…65.535

  The switch on duration of the output is set here.

  Time for OFF in 0.1 s [4...65.535]

  Options: 4…10…65.535

  The switch off duration of the output is set here.

  Number of ON-impulses [1…255]

  Options: 1…255

  The number of impulses for the time function is set here, i.e., the number of times the time function is performed is set.

Note
The time function is interrupted after the change of status independently of the set number of impulses.

  Start time function if "switching" is

  Options: ON (1)
  OFF (0)
  ON (1) or OFF (0)

  This parameter determines the communication object value at which the time function is performed.

- *no:* The time function is not enabled.
  The following parameters appear:

  Invert output

  Options: yes
  no

  - *yes:* The contact position is inverted (normally closed).
  - *no:* The contact position is not inverted (normally opened).

  Output behavior after bus voltage recovery

  Options: contact open
  contact closed
  contact unchanged

  It is possible to set if the output should be *off* (contact open), *on* (contact closed) or *unchanged* after bus voltage recovery.

3.4 Communication objects

The communication objects are different for each operating mode and are therefore explained based on the operating modes.

Note
In this product manual, 2-fold, 4-fold and 8-fold Security Terminals are described. Using these devices, two, four and eight zones respectively can be monitored. However, as the functions for all zones are identical, only the functions of zone A will be described. Should the details in the product manual refer to Security Terminals, 2-fold corresponds to zone A…B, 4-fold corresponds to zones A…D and 8-fold corresponds to zones A…H; the designation zones A…X is used. Should the details in the product manual refer to all outputs, 2-fold corresponds to outputs 1…2, 4 and 8-fold refer to outputs 1…3; the designation output 1…X is used.

3.4.1 Operation mode *stand-alone security system*

3.4.1.1 Device status

Number	Object Function	Name	Length	C	R	W	T	U
0	In operation/error 12 V	Device state	1 bit	C	R	-	T	-
62	Request status values	Device state	1 bit	C	-	W	-	-

No.	Function	Object name	Data type	Flags
0	**In operation/error 12 V**	**Device status**	**EIS 1, 1 bit** **DPT 1.002**	**C, R, T**

This communication object is enabled if in parameter window *General* the parameter *Enable communication object "In operation/error 12 V" 1 bit* has been selected with option *yes*.

The communication object *In operation/error 12 V* can be sent cyclically on the bus in order to regularly monitor the presence of the Security Terminal. Furthermore, this communication object will indicate a fault in the 12 V DC auxiliary voltage supply.

As long as the communication object is activated, it sends an in operation telegram.
In the event of a fault (fault on the 12 V DC auxiliary supply), the communication object value is inverted.

Telegram value: Adjustable in the parameters

No.	Function	Object name	Data type	Flags
62	**Request status values**	**Device status**	**EIS 1, 1 bit** **DPT 1.001**	**C, W**

This communication object is only enabled if in parameter window *General* the parameter *Enable communication object "Request status values" 1 bit* has been selected with option *yes*.

If a telegram with the value x (x = 0 or 1, depending on the parameterisation) is received on this communication object, all status objects are sent on the bus.

The following function results for the option x = 1:

Telegram value 0 = nothing happens.
1 = all status messages are sent.

- Status internally set (CO[1)] No. 2)
- Status externally set (CO[1)] No. 4)
- Status internally or externally set (CO[1)] No. 5)
- Status output 1…3 (CO[1)] No. 11…13)
- Status manual operation (CO[1)] No. 15)
- Status ready to set (internally) (CO[1)] No. 16)
- Status ready to set (externally) (CO[1)] No. 17)
- Status zones A…X[2)] (CO[1)] No. 30…Y[3)])

[1)] CO = communication object

[2)] X = dependent on the number of inputs of the device, X = B/D/H

[3)] Y = dependent on the number of inputs of the device, Y = 31/33/37

3.4.1.2 Setting/unsetting

Number	Object Function	Name	Length	C	R	W	T	U
1	Internal setting/unsetting	Setting/Unsetting	1 bit	C	-	W	-	-
2	Status internally set	Setting/Unsetting	1 bit	C	R	-	T	-
3	External setting/unsetting	Setting/Unsetting	1 bit	C	-	W	-	-
4	Status externally set	Setting/Unsetting	1 bit	C	R	-	T	-
5	Status int. or ext. set	Setting/Unsetting	1 bit	C	R	-	T	-
16	Ready to set (internally)	Setting/Unsetting	1 bit	C	R	-	T	-
17	Ready to set (externally)	Setting/Unsetting	1 bit	C	R	-	T	-
18	Setting confirmation	Setting/Unsetting	1 bit	C	-	-	T	-
19	Unsetting confirmation	Setting/Unsetting	1 bit	C	-	-	T	-
20	Error during setting	Setting/Unsetting	1 bit	C	-	-	T	-
21	Delay time is active	Setting/Unsetting	1 bit	C	-	-	T	-
22	Alarm delay is active	Setting/Unsetting	1 bit	C	-	-	T	-

No.	Function	Object name	Data type	Flags
1	**Internal setting/unsetting:**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.001**	**C, W**

This communication object is used for internal setting/unsetting.

Note
Only the peripheral detectors are set with an internally set system.

Telegram value: 0 = *unset* request
1 = *set* request

2	**Status internally set**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object shows that the device is internally set.

The communication object value is sent after every setting or unsetting request that the communication object *Internal setting/unsetting* receives or directly after actuation of the setting input. Accordingly, with an unsuccessful setting request the status is updated and the device that made the request is informed.

Telegram value: 0 = The system is not internally set.
1 = The system is internally set:
The peripheral detectors are set.

The communication object sends a negative acknowledgement after an unsuccessful setting attempt.

No.	Function	Object name	Data type	Flags
3	**External setting/unsetting**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.001**	**C, W**

This communication object is used for external setting/unsetting.

Note
On an externally set system, the peripheral and internal intrusion detectors are set.

Telegram value: 0 = *unset* request
1 = *set* request

No.	Function	Object name	Data type	Flags
4	**Status externally set**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.001**	**C, W**

This communication object shows that the device is externally set.

The communication object value is sent after every setting or unsetting request that the communication object *External setting/unsetting* receives or directly after actuation of the setting input. Accordingly, with an unsuccessful setting request the status is updated and the device that made the request is informed.

Telegram value: 0 = The system is not externally set.
1 = The system is externally set:
The peripheral and internal intrusion detectors are set.

The communication object sends a negative acknowledgement after an unsuccessful setting attempt.

No.	Function	Object name	Data type	Flags
5	**Status int. or ext. set**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object can be used, for example, for controlling bolt locks. These are fitted to the doors and prevent unintentional access when internal or external setting is activated.

Telegram value: 0 = The system is unset.
1 = The system is internally or externally set.

No.	Function	Object name	Data type	Flags
16	**Status ready to set (internally)**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

The system is not ready to set if:

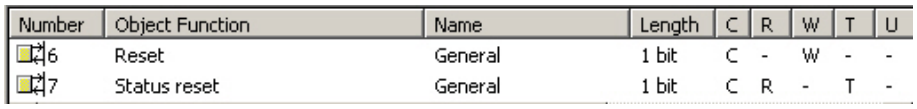
- An alarm or a fault exists and the system has not yet been reset.
- A detector that is to be set is triggered.
- The system is already set.

Telegram value: 0 = The system is not ready to internally set.
1 = The system is ready to internally set

No.	Function	Object name	Data type	Flags
17	**Status ready to set (externally)**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
The system is not ready to set if: • An alarm or a fault exists and the system has not yet been reset. • A detector that is to be set is triggered. • The system is already set. Telegram value: 0 = The system is not ready to externally set. 1 = The system is ready to externally set				
18	**Setting confirmation**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object sends the value 1 after external setting and then value 0 after a programmable time. The time can be set with the parameter *Period of message "Setting confirmation"* in the parameter window *Setting/Unsetting*. Using this communication object, you can for example control an LED or buzzer to indicate successful setting to the user.				
19	**Unsetting confirmation**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object sends the value 1 after external unsetting and then value 0 after a programmable time. The time can be set with the parameter *Period of message "Setting confirmation"* in the parameter window *Setting/Unsetting*. Using this communication object, you can, for example, control an LED or buzzer to indicate successful unsetting to the user.				
20	**Errors during setting**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, T**
For signalling an error with the operation of the setting device (negative acknowledgement). After a negative acknowledgement the communication object sends the value 1 then value 0 after a programmable time. With delayed setting, the communication object with the value 1 is sent, if setting is not possible after the delay time has elapsed, e.g. the door has not been locked. With normal setting, the communication object is sent with the value 1, should a setting attempt fail, e.g. because a window is still open.				
21	**Delay time is active**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, T**
This communication object is enabled if in parameter window *Setting/Unsetting* the parameter *Mode of setting/unsetting the system* has been selected with the option *delayed*. It indicates whether the delay time is active. Telegram value: 0 = Delay time is not active 1 = Delay time is active				

No.	Function	Object name	Data type	Flags
22	**Alarm delay is active**	**Setting/unsetting**	**EIS 1, 1 bit DPT 1.002**	**C, T**
This communication object is enabled if in parameter window *Setting/Unsetting* the parameter *Mode of setting/unsetting the system* has been selected with the option *delayed.* It indicates whether the alarm delay is active. Telegram value: 0 = Alarm delay is not active 1 = Alarm delay is active				

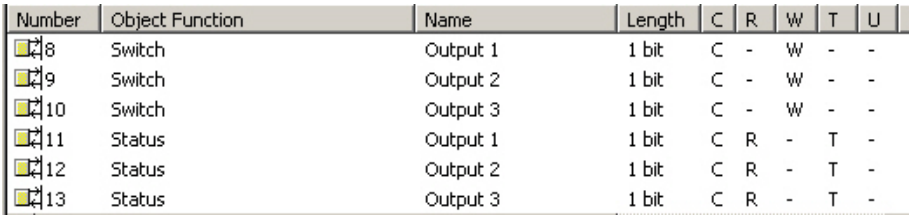
3.4.1.3 General



Number	Object Function	Name	Length	C	R	W	T	U
6	Reset	General	1 bit	C	-	W	-	-
7	Status reset	General	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
6	**Reset**	**General**	**EIS 1, 1 bit** **DPT 1.001**	**C, W**
This communication object resets the device with the telegram value 1. Reset is only possible in the unset state. During a reset, the alarm memory, alarms, tampering and communication object *In operation/error 12 V* are reset. All triggered zones and existing faults must be remedied beforehand. Telegram value: 0 = no reaction 1 = *Device reset* request				
7	**Status reset**	**General**	**EIS 1, 1 bit** **DPT 1.002**	**C, R, T**
This communication object indicates the status of the reset. Telegram value: 0 = no reset 1 = reset is undertaken				

3.4.1.4 Output 1…X



Number	Object Function	Name	Length	C	R	W	T	U
8	Switch	Output 1	1 bit	C	-	W	-	-
9	Switch	Output 2	1 bit	C	-	W	-	-
10	Switch	Output 3	1 bit	C	-	W	-	-
11	Status	Output 1	1 bit	C	R	-	T	-
12	Status	Output 2	1 bit	C	R	-	T	-
13	Status	Output 3	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
8… 10	**Switch**	**Output 1…3**	**EIS 1, 1 bit DPT 1.001**	**C, W**

These communication objects are enabled if in parameter window *Output 1…X* the parameter *Operating mode of output* has been selected with the option *via communication object*.

Telegram value: 0 = contact open
1 = contact closed

These values can be inverted.

Note

Security Terminal MT/U 2.12.2 only has communication objects 8 and 9, as it only features two outputs.

No.	Function	Object name	Data type	Flags
11… 13	**Status**	**Output 1…3**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

These communication objects indicate the current states of the outputs.

Telegram value: 0 = output switched off
1 = output switched on

These values can be inverted.

Note

Security Terminal MT/U 2.12.2 only has communication objects 11 and 12, as it only features two outputs.

3.4.1.5 Manual operation

Number	Object Function	Name	Length	C	R	W	T	U
14	Enable/block manual operation	Manual operation	1 bit	C	-	W	-	-
15	Status of manual operation	Manual operation	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
14	**Enable/ Disable manual operation**	**Manual operation**	**EIS 1, 1 bit DPT 1.001**	**C, W**

The *Manual operation* of the device is enabled or blocked via this communication object.

Note
If this communication object is assigned to a group address, the manual operation is blocked after each download, bus reset or bus voltage recovery. If the communication object is not assigned, manual operation is enabled.

If the communication object value is 0, then switch over to *Manual operation* is implemented using button on the device

If this communication object has a 1, the device is reset to *KNX operation*.

Telegram value: 0 = button enabled
1 = disable button

Note
Security Terminal MT/U 2.12.2 does not have manual operation.

No.	Function	Object name	Data type	Flags
15	**Status manual Operation**	**Manual operation**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

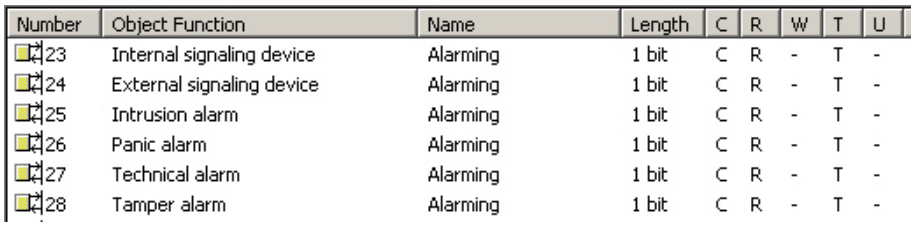
This communication object indicates whether manual operation is activated.

Telegram value: 0 = manual operation not active
1 = manual operation active

The *Status of manual operation* is sent on *after a change*, *after request* or *after a change and request* as programmed.

Note
Security Terminal MT/U 2.12.2 does not have manual operation.

3.4.1.6 Alarming



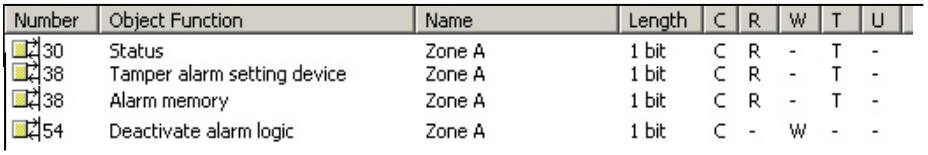
Number	Object Function	Name	Length	C	R	W	T	U
23	Internal signaling device	Alarming	1 bit	C	R	-	T	-
24	External signaling device	Alarming	1 bit	C	R	-	T	-
25	Intrusion alarm	Alarming	1 bit	C	R	-	T	-
26	Panic alarm	Alarming	1 bit	C	R	-	T	-
27	Technical alarm	Alarming	1 bit	C	R	-	T	-
28	Tamper alarm	Alarming	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
23	**Internal signaling device**	**Alarming**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object is used for controlling an internal signalling device. It remains at the value 1 until the system is unset or a reset has been performed in the unset state. In the unset state, the communication object is set to the value 1 with tampering or a technical alarm. In the internally set state, the communication object is set to the value 1 with and intrusion alarm, tampering or a technical alarm.				
24	**External signaling device**	**Alarming**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object is used for controlling an external signalling device. It remains at the value 1 until system has been unset. In the externally set state, the communication object is set to the value 1 with an intrusion alarm or tampering.				
25	**Intrusion alarm**	**Alarming**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object is set to the value 1 by the following triggered detectors: • Intrusion detector or a delayed intrusion detector in the externally set state. • Peripheral detector or delayed peripheral detector in the internally or externally set state. The communication object is set to the value 0 by a reset request.				
26	**Panic alarm**	**Alarming**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object is set to the value 1 by a triggered panic detector: The communication object is set to the value 0 by a reset request.				
27	**Technical alarm**	**Alarming**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object is set to the value 1 by a triggered technical detector 1. Depending on the parameterisation, the communication object is automatically (with a resolved technical detector) reset or reset to the value 0 by a reset command.				

No.	Function	Object name	Data type	Flags
28	**Tamper alarm**	**Alarming**	**EIS 1, 1 bit** **DPT 1.002**	**C, R, T**
This communication object is set to the value 1 by a triggered tamper detector, depending on the parameterisation based on a 12 V auxiliary voltage failure or by tampering of the setting line. The communication object is set to the value 0 by a reset request.				

3.4.1.7 Zone A

The communication objects of all *Zones* do not differentiate from one another and are explained using *Zone A*.



Number	Object Function	Name	Length	C	R	W	T	U
30	Status	Zone A	1 bit	C	R	-	T	-
38	Tamper alarm setting device	Zone A	1 bit	C	R	-	T	-
38	Alarm memory	Zone A	1 bit	C	R	-	T	-
54	Deactivate alarm logic	Zone A	1 bit	C	-	W	-	-

No.	Function	Object name	Data type	Flags
30… 37	**Status**	**Zones A…X**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object indicates the status of the zone.

Telegram value: 0 = resolved
1 = triggered

38… 45	**Tamper alarm setting device**	**Zones A…X**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object is only enabled if in parameter window *Zone A…X*, the parameter *Input* has been selected with the option *Setting/Unsetting input* and the parameter *Function* with the option *Monitored N/C contact*.

By producing a short-circuit or an open circuit on the setting/unsetting input, the communication object is set to the value 1.

The communication object is set to the value 0 by a reset request.

Telegram value: 0 = setting/unsetting input OK
1 = short-circuit/open circuit of the setting/unsetting input

38… 45	**Alarm memory**	**Zones A…X**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object is enabled if in parameter window *Zone A…X*, the parameter *Enable communication object "Alarm memory" 1 bit* is selected with option *yes*. However, the parameter is not available for every input type selection.

The communication object saves the state of the triggered zone on an alarm.

The communication object is set to the value 0 by a reset request.
Should the alarm logic of the zone be switched off, the communication object also has the value 0.

The value of this communication object corresponds with the LED display on the device, with the exception of the externally set state.

Telegram value: 0 = OK
1 = alarm memory

No.	Function	Object name	Data type	Flags
54… 61	**Deactivate alarm logic**	**Zones A…X**	**EIS 1, 1 bit DPT 1.001**	**C, W**

This communication object is enabled if in parameter window *Zone A…X*, the parameter *Deactivate alarm logic via communication object* has been selected with option *yes*.

Using this communication object, the alarm logic of the zone can be switched off.

Telegram value: 0 = alarm logic not switched off
1 = alarm logic switched off

3.4.2 Operation mode *with Security Module / Intrusion alarm system*

3.4.2.1 Device status

Number	Object Function	Name	Length	C	R	W	T	U
0	In operation/error 12 V	Device state	1 bit	C	R	-	T	-
62	Request status values	Device state	1 bit	C	-	W	-	-

No.	Function	Object name	Data type	Flags
0	**In operation/error 12 V**	**Device status**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object is enabled if in parameter window *General* the parameter *Enable communication object "In operation/error 12 V" 1 bit* has been selected with option *yes*.

The communication object *In operation/error 12 V* can be sent cyclically on the bus in order to regularly monitor the presence of the Security Terminal. Furthermore, this communication object will indicate a fault in the 12 V DC auxiliary voltage supply.

As long as the communication object is activated, it sends an in operation telegram.
In the event of a fault (fault on the 12 V DC auxiliary supply), the communication object value is inverted.

Telegram value: Adjustable in the parameters

No.	Function	Object name	Data type	Flags
62	**Request status values**	**Device status**	**EIS 1, 1 bit DPT 1.001**	**C, W**

This communication object is only enabled if in parameter window *General,* the parameter *Enable communication object "Request status values" 1 bit* has been selected with option *yes*.

If a telegram with the value x (x = 0 or 1) is received on this communication object, all status objects are sent on the bus.

The following function results for the option x = 1:

Telegram value 0 = nothing happens.
1 = all status messages are sent.

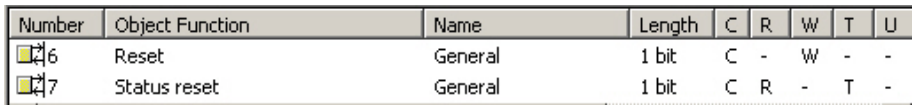
- Status output 1…3 (CO[1] No. 11…13)
- Status manual operation (CO[1] No. 15)
- Status zones A…X[2] (CO[1] No. 30…Y[3])

[1] CO = communication object

[2] X = dependent on the number of inputs of the device, X = B/D/H

[3] Y = dependent on the number of inputs of the device, Y = 31/33/37

3.4.2.2 General



Number	Object Function	Name	Length	C	R	W	T	U
6	Reset	General	1 bit	C	-	W	-	-
7	Status reset	General	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
6	**Reset**	**General**	**EIS 1, 1 bit** **DPT 1.001**	**C, W**

This communication object resets the device with the telegram value 1.

With a reset, the zones are briefly disconnected from the voltage supply, and the *Tamper alarm setting device* is reset. All triggered zones and existing faults must be remedied beforehand.

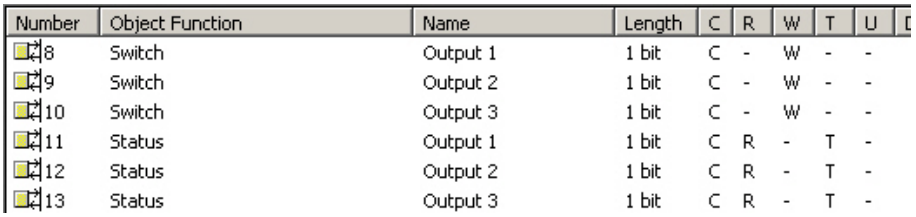
Telegram value: 0 = no reaction
1 = *Device reset* request

No.	Function	Object name	Data type	Flags
7	**Status reset**	**General**	**EIS 1, 1 bit** **DPT 1.002**	**C, R, T**

This communication object is enabled if the *Reset* button is enabled via *Manual operation*. The communication object is now used for an external reset request, i.e. this communication object only sends a request by actuation of the *Reset* push button on the bus.

Telegram value: 0 = no reaction
1 = request (reset)

3.4.2.3 Output 1…X



Number	Object Function	Name	Length	C	R	W	T	U
8	Switch	Output 1	1 bit	C	-	W	-	-
9	Switch	Output 2	1 bit	C	-	W	-	-
10	Switch	Output 3	1 bit	C	-	W	-	-
11	Status	Output 1	1 bit	C	R	-	T	-
12	Status	Output 2	1 bit	C	R	-	T	-
13	Status	Output 3	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
8… 10	**Switch**	**Output 1…3**	**EIS 1, 1 bit DPT 1.001**	**C, W**

These communication objects are enabled if in parameter window *Output 1…X* the parameter *Operating mode of output* has been selected with the option *via communication object*.

Telegram value: 0 = contact open
1 = contact closed

These values can be inverted.

Note

Security Terminal MT/U 2.12.2 only has communication objects 8 and 9, as it only features two outputs.

No.	Function	Object name	Data type	Flags
11… 13	**Status**	**Output 1…3**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

These communication objects indicate the current states of the outputs.

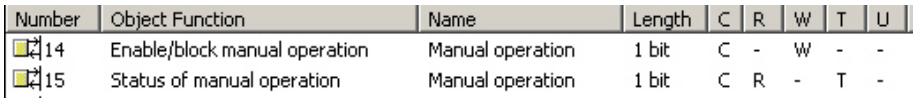
Telegram value: 0 = output switched off
1 = output switched on

These values can be inverted.

Note

Security Terminal MT/U 2.12.2 only has communication objects 11 and 12, as it only features two outputs.

3.4.2.4 Manual operation



Number	Object Function	Name	Length	C	R	W	T	U
14	Enable/block manual operation	Manual operation	1 bit	C	-	W	-	-
15	Status of manual operation	Manual operation	1 bit	C	R	-	T	-

No.	Function	Object name	Data type	Flags
14	**Enable/ disable manual operation**	**Manual operation**	**EIS 1, 1 bit DPT 1.001**	**C, W**

The *Manual operation* of the device is enabled or blocked via this communication object.

Note
If this communication object is assigned to a group address, the manual operation is blocked after each download, bus reset or bus voltage recovery. If the communication object is not assigned, manual operation is enabled.

If the communication object value is 0, then switch over to *Manual operation* is implemented using button on the device

If this communication object has a 1, the device is reset to *KNX operation*.

Telegram value: 0 = button enabled
1 = disable button

Note
Security Terminal MT/U 2.12.2 does not have manual operation.

No.	Function	Object name	Data type	Flags
15	**Status manual Operation**	**Manual operation**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**

This communication object indicates whether manual operation is activated.

Telegram value: 0 = manual operation not active
1 = manual operation active

The *Status of manual operation* is sent on *after a change*, *after request* or *after a change and request* as programmed.

Note
Security Terminal MT/U 2.12.2 does not have manual operation.

3.4.2.5 Zone A

The communication objects of all *Zones* do not differentiate from one another and are explained using *Zone A*.

Number	Object Function	Name	Length	C	R	W	T	U
30	Status	Zone A	1 bit	C	R	-	T	-
38	Tamper alarm setting device	Zone A	1 bit	C	R	-	T	-
46	Set/Unset request	Zone A	1 bit	C	R	W	T	-

No.	Function	Object name	Data type	Flags
30… 37	**Status**	**Zones A…X**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object indicates the status of the zone. Telegram value: 0 = resolved 1 = triggered				
38… 45	**Tamper alarm setting device**	**Zones A…X**	**EIS 1, 1 bit DPT 1.002**	**C, R, T**
This communication object is only enabled if in parameter window *Zone A…X* the parameter *Input* has been selected with the option *Setting/Unsetting input,* and the parameter *Function* with the option *Monitored N/C contact*. By producing a short-circuit or an open circuit on the setting/unsetting input, the communication object is set to the value 1. The communication object is set to the value 0 by a reset request. Telegram value: 0 = setting/unsetting input OK 1 = short-circuit/open circuit of the setting/unsetting input				
46… 53	**Set/Unset request**	**Zones A…X**	**EIS 1, 1 bit DPT 1.001**	**C, R, W**
This communication object is only enabled if in parameter window *Zone A…X* the parameter *Input* has been selected with option *Setting/Unsetting input*. The communication object is used for the set/unset request. The following functions result through the parameter selection *N/O*: In conjunction with the parameter *Button:* Contact: open = no reaction *closed* = set/unset request (switchover function) In conjunction with the parameter *Switch*: Contact: open = unset request *closed* = set request These functions are *inverted* with the parameter selection *N/C*. The parameter selection *Monitored N/C contact (2.7 kOhm + 560 Ohm)* can only be implemented in conjunction with *NC contacts*. A short-circuit or an interruption of the setting line sets the communication object *Tamper alarm setting device* to the value 1.				

3.5 Special operation states

Reaction on bus voltage failure and recovery

At bus voltage failure, the zones can no longer be evaluated and an alarm no longer occurs. The outputs remain in their current state. All LEDs switch off.

After bus voltage recovery, the end of the send and switch delay is awaited. During this time, no telegrams are sent on the bus and the state of the outputs remains unchanged. Received telegrams are detected after the initialisation time.

After the send and switch delay has timed out, all communication objects are updated and sent on the bus if required.

The setting state of the device remains unchanged after bus voltage recovery.

Reaction on auxiliary voltage failure and recovery

Should the 12 V DC auxiliary voltage of the device fail, the device sends a fault via the communication object *In operation/error 12 V*. Without auxiliary voltage, the zones are no longer capable of function and the outputs are switched off (monostable behaviour of the outputs). The display of the zones on the bus is thus undefined, and the device sets the communication object *Tamper alarm* to the value 1 (if parameterised).

At auxiliary voltage recovery, the zones are once again functional and the outputs return to their defined state. All communication objects are updated on the bus. The communication object *In operation/error 12 V* is (depending on the programming) reset automatically or via Reset.

Behaviour during/after programming

The device is out of operation during programming.

The device is initialised after programming and is in the unset state.

Behaviour at reset via the ETS

All alarms and faults are reset, and the zones are briefly disconnected from the voltage supply with a reset of the device. The device is in the unset state after a reset.

4 Planning and application

Detailed planning is the first prerequisite for a fault-free and effective security and surveillance system

This will be explained in more detail based on a project example.

Peripheral monitoring

What	How	With what	Note
Doors / windows	Opening	Magnetic contacts	Drill hole or flush mounting in or on the window frames
	Breakage/rupture	Passive or acoustic glass break detectors	

Interior monitoring

What	With what	Note
Motion in rooms	Passive infrared detector	Observe sources of interference! Heat and cold sources.
	Dual detectors	Observe sources of interference! Draughts, interfering transmitters.

Lock monitoring

What	How	With what	Note
Doors/ windows	Locking	Strike plate contacts Lock monitoring for the windows (blocking bolts)	Fitting in the door strike plate Fitting in the window surround

Technical monitoring

What	With what	Note
Water leak	Water detector	–

Emergency call

What	With what	Note
Emergency call	Emergency Call Button	–

Setting device

What	With what	Note
Switch set/unset	SafeKey Wall Reader	By chip key insertion or code entry

Operation and display device

What	With what	Note
Operation and displays	KNX-capable operation and display device	–

Alarming

What	With what	Note
Internal	Internal siren	Via operation and display devices
External local	External siren with/without strobe light	Height min. 3 m
External silent	Telephone Gateway TG/S	A/B cable

4.1 Parts list with wired technology

Quantity	Device	Type
1	Security Terminal	MT/S 8.12.2M
1	Uninterruptible Power Supply 12 V DC	NTU/S 12.2000.1
1	Uninterruptible Power Supply KNX	SU/S 30.640.1
2	Battery module	AM/S 1.1
13	Magnetic Reed Contact Set	MRS/W
4	Glass Break Sensor	SPGS/W
10	Blocking Bolt	ADB
3	Water Detector	SWM4
1	Emergency Call Button	NDU/W
7	IR Motion Detector	IR/KB
1	Telephone Gateway	TG/S 3.2
1	Setting device	WELT/A
1	SafeKey Setting Module	SSM/U 1.1
2	Lock Bolt Switching Contact	WRK/W
1	Combination Signalling Device	SSF/GB
2	Operation and display device	

4.2 Alarming matrix

Input	Unset	Internally set:	Externally set
Peripheral detector		Internal signaling device + Intrusion alarm	External signaling device + Intrusion alarm
Internal detector			External signaling device + Intrusion alarm
Peripheral detector (delayed)		Internal signaling device + Intrusion alarm	External signaling device + Intrusion alarm
Intrusion detector (delayed)			External signaling device + Intrusion alarm
Panic detector	Panic alarm	Panic alarm	Panic alarm
Tamper contact	Internal signaling device + tamper alarm	Internal signaling device + tamper alarm	External signaling device + tamper alarm
Tech. alarm detector 1	Internal signalling device + technical alarm	Internal signalling device + technical alarm	Technical alarm
Tech. alarm detector 2			
Setting/Unsetting input (only with a monitored N/C contact)	Internal signaling device + tamper alarm setting device + tamper alarm	Internal signaling device + tamper alarm setting device + tamper alarm	External signaling device + tamper alarm setting device + tamper alarm
Lock monitoring detector			
Reset input			
Failure of 12 V DC (if tampering programmed)	Internal signaling device + tamper alarm	Internal signaling device + tamper alarm	External signaling device + tamper alarm

A Appendix

A.1 Technical documentation

In the following chapter, you will find a selection of possible detectors for connection to the Security Terminal.

A.1.1 Detectors for peripheral monitoring

Magnetic Reed Contact

Magnetic Reed Contacts MRS/W monitors the opening of doors and windows.

Function

The reed contact is actuated without contact by a separate permanent magnet.
Both units are fitted opposite one another in parallel (with flush mounting) or end to end (with drill-hole mounting). Should the distance between them increase, the reed contact opens and the zone is interrupted.

Glass Break Sensor

The electronic Glass Break Sensor SPGS/W is used to monitor the glass surfaces of windows and doors.
The passive glass break sensor must be mounted on double glazing windows out of reach.

Function

The piezoelectric microphone registers the typical vibrations that are caused by forcible damage to a pane of glass.

A.1.2 Detectors for interior monitoring

Infrared motion detectors

The Passive Infrared Detector IR/K is an intrusion detector (VdS class B) that detects and signals motion within its detection range. It facilitates monitoring of an area with a volumetric IR range of up to 15 m and can be optionally set for hall monitoring function up to 15 m.

A.1.3 Detectors for lock monitoring

Dual Motion Detector

The EIM/KB is a motion detector for indoor use. The detector combines proven passive infrared technology with temperature-independent microwave technology. The combination of both functional principles results in a detector featuring high immunity to false alarms even with unfavourable ambient conditions and which still provides high detection security.

Lock bolt switching contact

The Lock Bolt Switching Contact WRK/W is used for monitoring locks on doors and windows.
The switching element of the lock bolt switching contact is a micro-switch with a two-way contact.

A.1.4 Technical detectors

Water Detector

The Water Detector SWM4/RN is used to detect water ingress, e.g. pipe fractures, seepage of groundwater and sewage.
The water detector senses rising water via 4 electrodes which are located approx. 1 mm away from the edge of the housing.

Gas Detector

The gas detector SGL is used to monitor rooms in both residential and commercial buildings, in which installations and devices are operated with flammable gases.
It detects increased concentrations of flammable gases in the surrounding air and is highly sensitive to gases such as propane, methane and butane, as well as town gas and natural gas.

Caution

Buffering of the KNX bus voltage and the 12 V DC supply voltage with uninterruptible power supplies is required to ensure the function of the system during supply voltage failures.
Otherwise, an unnoticed and potentially hazardous gas leak could occur during a supply voltage failure.

Automatic fire detector in threshold alarm technology:

Fire detector

The FC600 fire detector series are conventional threshold alarm detectors that comply to the respective standard of the EN 54 standard series and are VdS approved. The detectors feature an alarm indicator on the detector head that is visible from all angles, and which can be triggered with a permanent magnet for test purposes. A detector base is provided for mounting and cable connection purposes, into which the detector is simply screwed in via the bayonet connection.

Caution

Buffering of the KNX bus voltage and the 12 V DC supply voltage with uninterruptible power supplies is required to ensure the function of the system during supply voltage failures.
Otherwise, an unnoticed and potentially hazardous fire could occur during a supply voltage failure.

Detector Base FC600/BREL

The detector base FC600/BREL enables system-independent connection of the FC600 series fire detector to systems or devices that are not specifically designed for this detector technology. Examples include Intrusion Alarm Panels, KNX Security Terminals, elevator controls or other signal processing equipment.

A.1.5 Devices for alarming

Telephone Gateway

Using the Telephone Gateway TG/S 3.2, it is possible to send configurable voice messages via the telephone network. As well as voice messages, emails or SMS messages can be sent.
If the device is called, it is possible to navigate through a menu using dial tones (DTMF), where states can be queried and commands can be executed.

Combination Signalling Device

The Combination Signalling Device SSF/GB is used for local alarms. The SSF/GB correspond to the VdS guidelines of VdS class C.
The acoustic alarm component consists of a tone generator with a power amplifier and loudspeaker.
The Combination Signalling Device SSF/GB also has a strobe light to provide an optical alarm signal.
The housing is made from corrosion-resistant aluminium with a protective enamel coating.
A cover tamper contact is implemented for protection against sabotage.

Internal siren

The Electronic Solid-State Siren SSS is used for issuing acoustic alarms within the protected area.
An intermittent signal of 2.7 kHz is produced by an electronic tone generator and converted into sound waves by a piezo element.

A.1.6 Panic detector

Silent alarm

The Emergency Call Button NDU/W is used for manual alarm activation.

- permanent trip recognition (complies with police regulations)
- Momentary-contact function
- Cover tamper contact
- Surface and flush mounting versions

A.1.7 Power supplies/back-up

Power supply

The Uninterruptible Power Supply NTU/S 12.2000.1 is a modular installation device in Pro*M*-Design, for snap-on mounting on a 35 mm mounting rail in a universal, wall-mounted or ceiling panel distribution board as well as in distributed surface mounted housings.
The power supply provides sufficient performance for all types of demanding applications, with a buffered output voltage of 12 V DC and a maximum output current of 2 A.

Voltage supply

The Uninterruptible EIB / KNX Power Supply SU/S 30.640.1 generates and monitors the KNX system voltage. The bus line is decoupled from the power supply with the integrated choke.

The power supply is connected to the bus line with a bus connection terminal.

Battery modules

The sealed lead acid battery module AM/S 12.1 is used for maintaining the KNX system voltage and the 12 V DC supply voltage during mains voltage failures. The battery module can only be used in combination with the Uninterruptible KNX Power Supply SU/S 30.640.1 or the Uninterruptible Power Supply NTU/S 12.2000.1.

The back-up time is dependent on the number of connected loads.
The battery module includes an integrated temperature sensor for temperature controlled monitoring of the charging voltage. An integrated fuse protects the module against short-circuits.

The Sealed Lead Acid Battery SAK7 with a capacity of 7 Ah is used to buffer the KNX system voltage in combination with the Uninterruptible KNX Power Supply or the 12 V DC supply voltage in combination with the Uninterruptible Power Supply NTU/S 12.2000.1.

Cable set

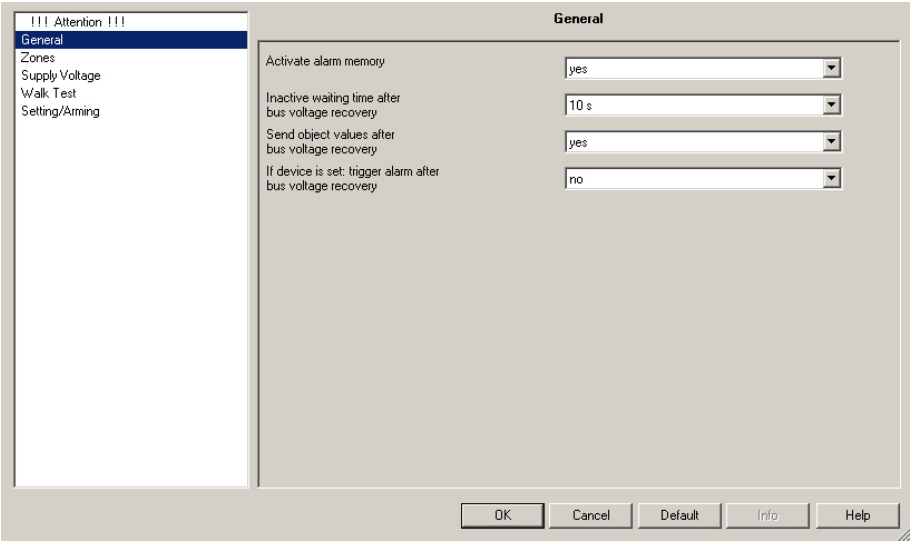
The Cable Set Basic KS/K 4.1 with integrated temperature sensor is used for the connection of a sealed lead acid battery SAK7 to the Uninterruptible Power Supply SU/S 30.640.1 or the Uninterruptible Power Supply NTU/S 12.2000.1.

A.2 Comparison of the functionality of the Zone Terminal and the Security Terminal

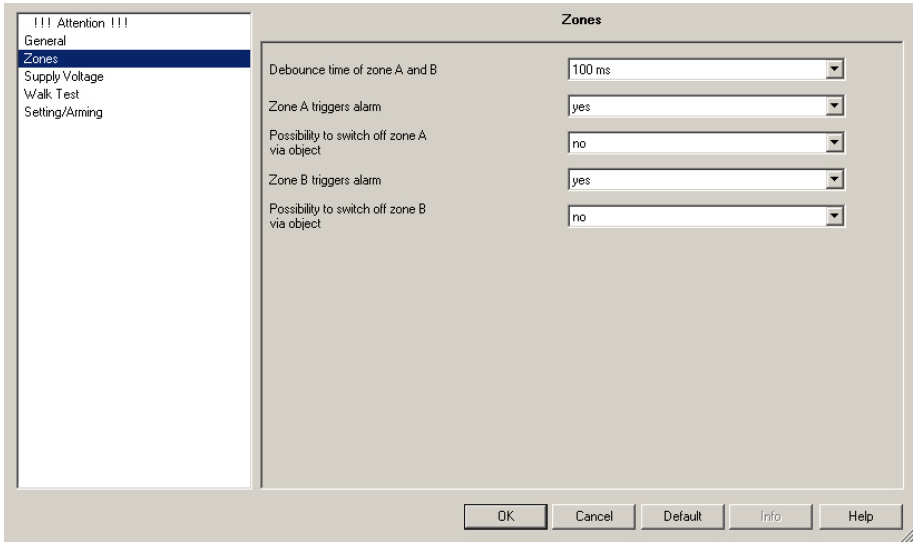
The Security Terminal is a further development of the Zone Terminals (MT/S 4.12.1 and MT/U 2.12.1). The functions of the Zone Terminals can be partly represented with the Security Terminal.

A.2.1 Comparison with MT/U 2.12.1

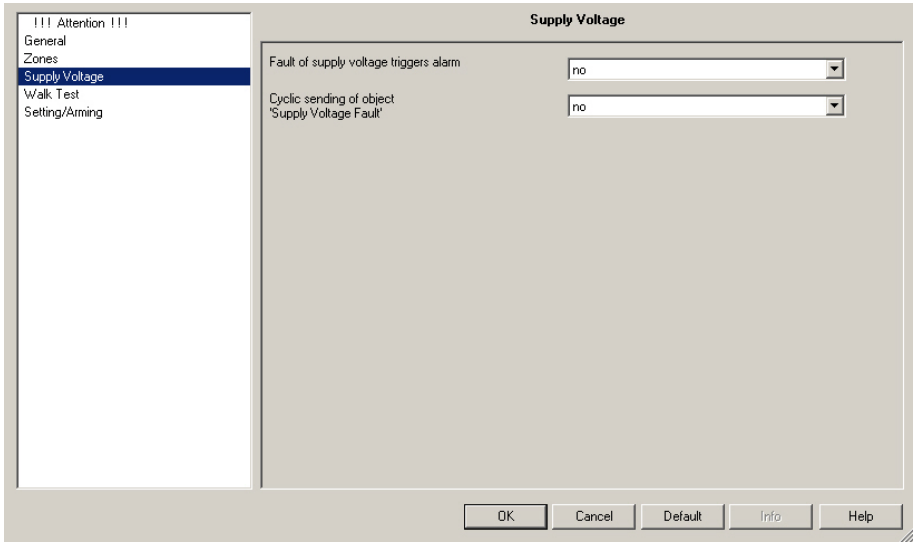
The following parameters and communication objects of the MT/U 2.12.1 are compared with those of the Security Terminal:



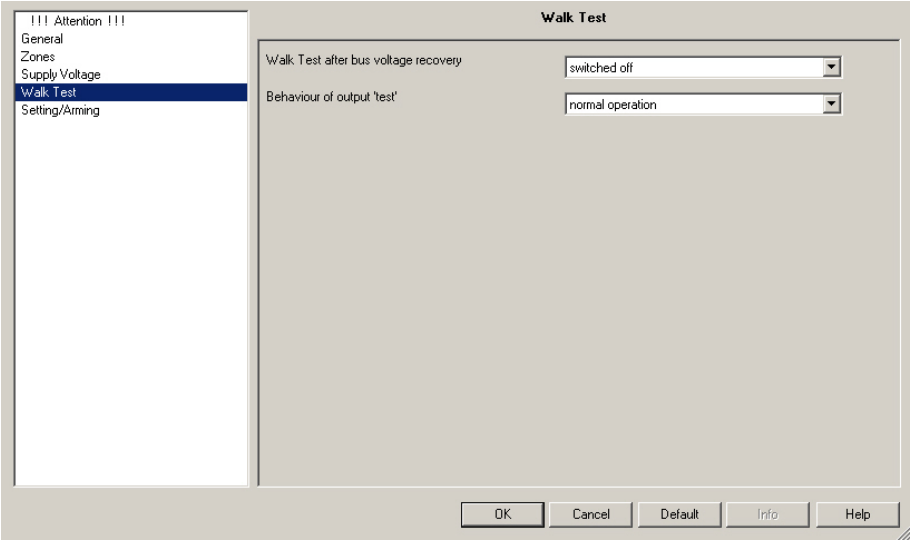
Zone Terminal	Security Terminal
Activate alarm memory	The alarm memory can be individually activated/deactivated for each input
Initialisation time	Sending and switching delay after bus voltage recovery
Send object value after bus voltage recovery	Sending and switching delay after bus voltage recovery
If device set: set alarm after bus voltage recovery	The device assumes the state before bus voltage recovery and does not trigger an alarm.



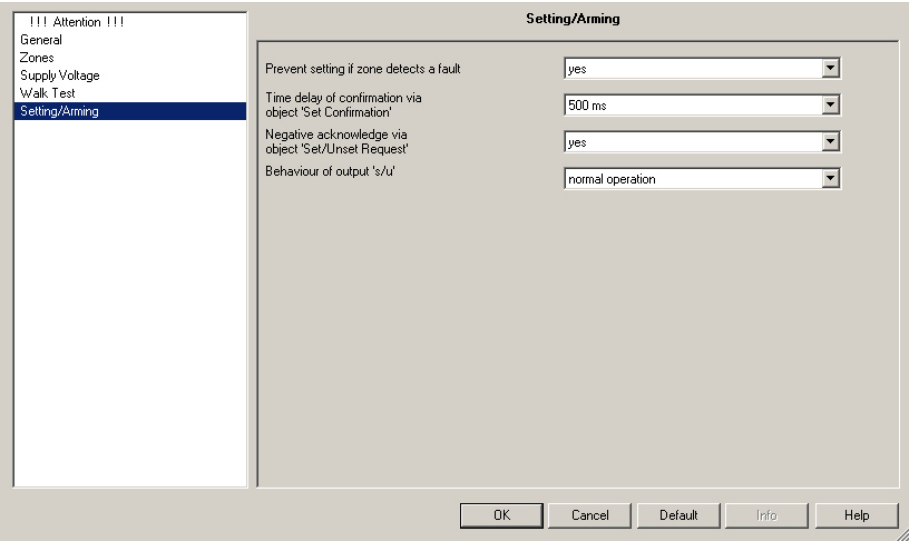
Zone Terminal	Security Terminal
Debounce time of zones A and B	Minimum signal time can be adjusted individually for each input
Zone X triggers alarm: yes	Use input of type *intrusion detector: peripheral protection*
Zone X triggers alarm: no	Use input of type *Tech. alarm detector 2*
Zone X can be deactivated via object	Alarm logic of the zones can be switched off via object



Zone Terminal	Security Terminal
Fault of supply voltage triggers alarm	Tamper alarm with a fault of the 12 V DC auxiliary voltage
Cyclic sending of object “Supply Voltage Fault”	Communication object “In operation/error 12 V“ enabled and cyclical sending activated



Zone Terminal	Security Terminal
Walk test after bus voltage recovery	Output behaviour after bus voltage recovery
Behaviour of the walk test output: time-limited operation	Enable time function of the output and set time



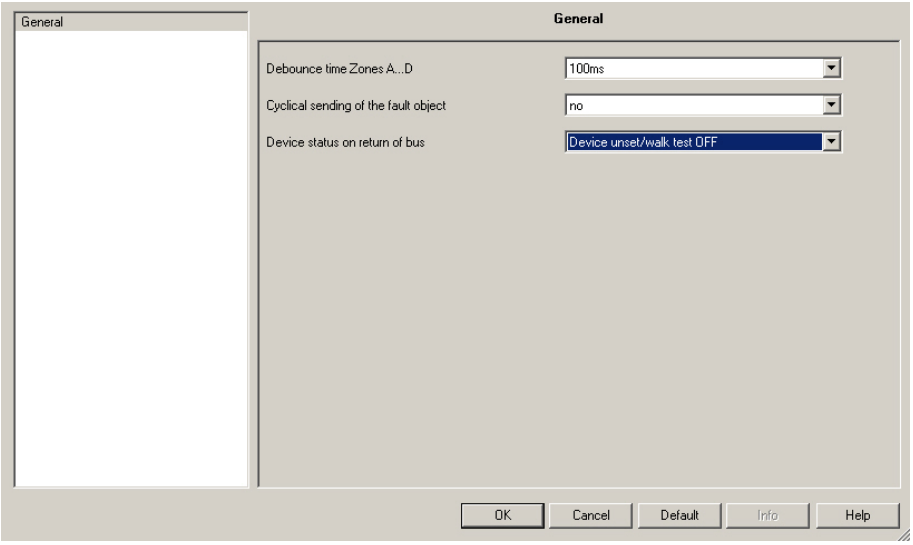
Zone Terminal	Security Terminal
Prevent setting if zone detects a fault	The inputs fundamentally prevent setting. *Tech. alarm detector 1* and *Panic detector* can be programmed to ensure that they do not prevent setting. Exceptions: *Setting/Unsetting input*, *Lock monitoring detector*, *Reset input* and *Tech. alarm detector 2* do not fundamentally prevent setting.
Time delay of confirmation via object "Set Conirmation"	Status externally set
Negative acknowledge via object "Set/Unset Request"	Errors during setting
Behaviour of output "s/u"	Enable time function of the output and set time

Number	Object Function	Name	Length	C	R	W	T	U
0	Status Zone A	Output Telegram: ...	1 bit	C	R	-	T	-
1	Status Zone B	Output Telegram: ...	1 bit	C	R	-	T	-
2	Set/Unset Request	Input/Output Tele...	1 bit	C	-	W	T	-
3	Alarm	Input/Output Tele...	1 bit	C	R	W	T	-
4	Walk Test	Input Telegram: W...	1 bit	C	-	W	-	-
5	Reset	Input Telegram: R...	1 bit	C	-	W	-	-
6	Supply Voltage Fault	Output Telegram: ...	1 bit	C	R	-	T	-
7	Set Confirmation	Output Telegram: s/u	1 bit	C	R	-	T	-

Zone Terminal	Security Terminal
Status zone X	Status zone X
Set/unset Request	Switch external set/unset
Alarm	Intrusion alarm
Walk test	Switch Output X
Reset	Reset
Supply Voltage Fault	In operation/error 12 V
Set Confirmation	Status externally set

A.2.2 Comparison with MT/S 4.12.1

The following parameters and communication objects of the Zone Terminal MT/U 4.12.1 are compared with those of the Security Terminal:



Zone Terminal	Security Terminal
Debounce time zones A…D	Minimum signal time
Cyclical sending of the fault object	Communication object “In operation/error 12 V“ enabled and cyclical sending activated
Device status on return of bus	The device assumes the state that it had before bus voltage recovery. The activation of the walk test should be implemented with the parameter *Output behaviour after bus voltage recovery*

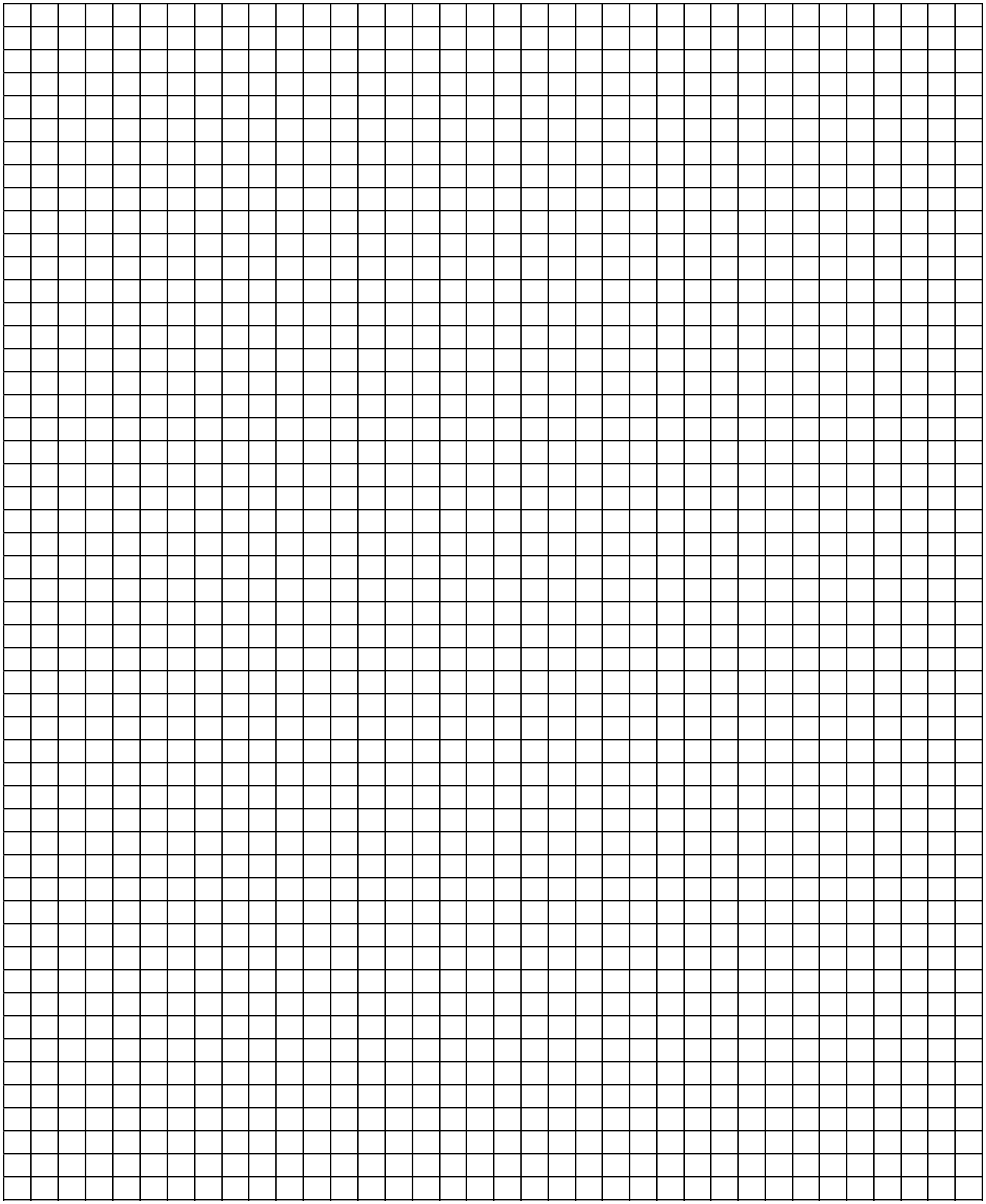
Number	Object Function	Name	Length	C	R	W	T	U
0	Telegr. Status Zone A	Input Zone A	1 bit	C	R	-	T	-
1	Telegr. Status Zone B	Input Zone B	1 bit	C	R	-	T	-
2	Telegr. Status Zone C	Input Zone C	1 bit	C	R	-	T	-
3	Telegr. Status Zone D	Input Zone D	1 bit	C	R	-	T	-
4	Set/Unset Request	Input Telegr.	1 bit	C	-	W	T	-
5	Reset Zones A...D	Input Telegr.	1 bit	C	-	W	T	-
6	Supply Voltage Fault	Output Telegr.	1 bit	C	R	-	T	-
7	Set confirmation	Output Telegr.	1 bit	C	R	-	T	-

Zone Terminal	Security Terminal
Telegr. Status Zone. X	Status/Alarm memory zone X Note: The status of the zones is also updated in the externally set state.
Set/unset Request	External setting/unsetting
Reset Zones A…D	Reset
Supply voltage Fault	In operation/error 12 V
Set confirmation	Status externally set

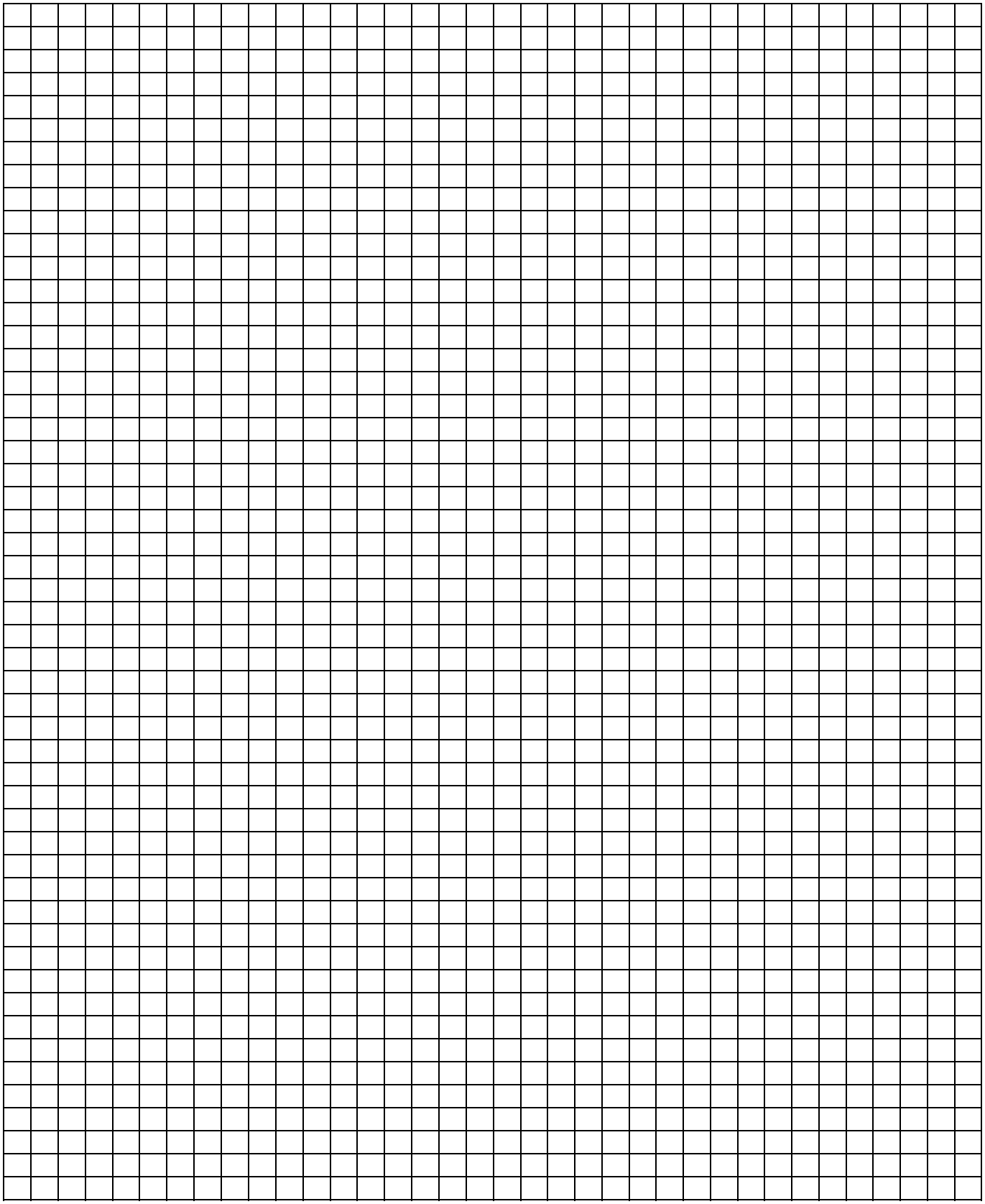
A.3 Ordering Information

Short description	Description	Order code	bbn 40 16779 EAN	Price group	Weight 1 pc. [kg]	Packaging [pc.]
MT/S 4.12.2M	Security Terminal, 4-fold, MDRC	2CDG 110 109 R0011	**711 87 6**	P2	0.15	1
MT/S 8.12.2M	Security Terminal, 8-fold, MDRC	2CDG 110 110 R0011	**711 86 9**	P2	0.15	1
MT/U 2.12.2	Security Terminal, 2-fold, FM	2CDG 110 111 R0011	**711 76 0**	P2	0.05	1

A.4 Notes



A.5 Notes



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