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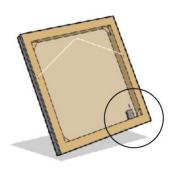
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Operating manual for

Piccolo®

Protection of objects and persons

System description / installation guide / programming guide





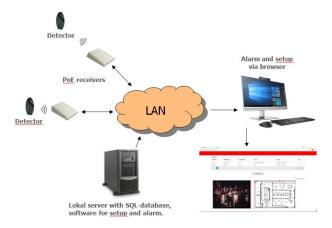
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1: Piccolo® - wireless protection

Piccolo® is a flexible alarm system ideal to survey objects and persons. The system is developed to operate wireless object protection in e.g. museums, galleries, hospitals and offices.

How the Piccolo® system works



System description

The entire alarm system is controlled through a local LAN network. Server software is installed on a server connected to the same LAN. Daily monitoring, setup and maintenance of the system is done using a browser opened on a PC connected to the same LAN.

Piccolo® handles detectors (also called transmitters) of various types. If the object is touched or removed, or if the call button on a personal alarm is activated, the detector will transmit a wireless signal to an alarm receiver.

Detectors

The detector is wireless and easy to install. The detector is battery driven.



A discrete placement behind the frame of a painting or in the corner of e.g. a showcase makes the detector invisible to the spectator. The wireless attribute and small dimension of the detector offer big options as regards its placement.

A personal alarm is a discrete transmitter which can be carried by the staff or placed under a desk.

Surveillance tasks can be performed effectively in places where it normally would be impossible or at least not without obstacles. Once the alarm receiver is mounted the detector can be moved freely to a convenient spot.

Alarm receivers

Several alarm receivers can be interconnected in the same network, for example one receiver in each room. The network is monitored from the local server.

Piccolo® server unit

The Piccolo® server unit monitors all active alarm receivers within the network. The Piccolo® server "picks up" alarm messages from each alarm receiver and saves them in an SQL database.

Forwarding alarms (interfaces)

Piccolo® can forward alarm messages to all units on the same LAN. Simultaneously it can send alarms to mobile phones and interface to a different alarm system. The alarm will be displayed within a few seconds on the monitoring screen of the Piccolo® PCprogram and e.g. as text message on mobile phones.

Possibilities of use

In case of an alarm Piccolo® can activate various outputs, for example:

- Text messages to an unlimited number of mobile phones, PC or security service.
- Output to other alarm systems: Pagers, video cameras/CCTV or control center).
- Output to sounder (e.g. a siren) or signal lamp.

Monitoring, set up, log

The system is administrated by opening a browser on a PC on the same network and indicate the Piccolo® Server IP address. The following opportunities are now available:

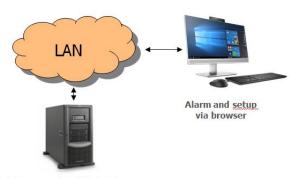
- Supervision of alarms and maintainance of system parameters.
- Coding/setting up of indexes and functions.
- See the alarm- and user history items in log files.

Chap. 2 contains a technical guide to install and implement the Piccolo® system. Some detailed instructions can be found in appendix.

2: Installation, Piccolo® Server

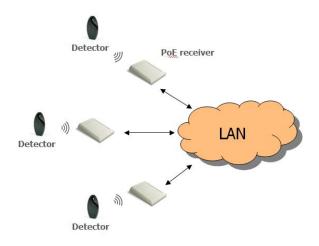
Do as follows:

Piccolo® is built around a LAN networs, on which the server with SQL database and software is installed (see instructions for installation of Piccolo® Server and SQL database).



Lokal server with SQL-database, software for setup and alarm.

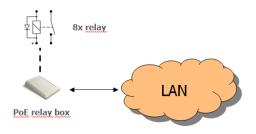
All receivers connects to the LAN network.



Connection of I/O interface:

Piccolo® Server can be extended with an I/O interface – a module with 8 relay outputs and 1 relay input.

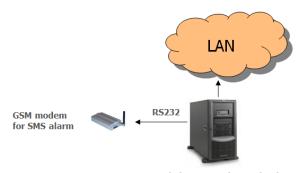
I/O interface is briefly connected to the same LAN as the receivers.



Install GSM modem

Piccolo® Server can be equipped with a GSM modem. In case of alarm or power failure the system can then send a text message to e.g. mobile phones.

GSM modem is connected to the server COM port.



Lokal server with SQL-database, software for setup and alarm.

Do the following:

1. Mount the GSM modem to the server COM port.

Install SIM card



The GSM modem must be fitted with its own SIM card in order to send alarm messages via the GSM net.

Prepare the SIM card in a GSM mobile phone:

- 2. Insert the SIM card in the mobile phone. The mobile phone must be turned off.
- 3. Check that the SIM card's PIN code is set to 1234 (default for most telephone companies). If not, set the PIN code to 1234.

Insert the SIM card into the GSM modem:

- 4. Remove the SIM card from the mobile phone.
- 5. Place the SIM card in the GSM unit.
- 6. Connect the GSM modem and, using the Piccolo® Server program, check that the GSM unit has contact to the GSM net.

List of inputs and outputs

Outputs:

- 1 in each receiver unit (marked **CNCNO**).
- 8 in the I/O Interface (number 1-8).

Inputs:

• 1 in the I/O Interface (number **21**).

Outputs are potential free relay contacts, which opens or closes by instructions to Piccolo® Server. At set up all relay outputs are open. 8 screw terminals give access to the relays. The instructions to which relays must be activated by alarm, are set up in the Piccolo® Server program.

Input are optocouplers. By shortcutting the screw terminals the input is activated. If the shortcutting is removed, the input is deactivated. In both cases an alarm will be sent from the central unit.

Examples of outputs and inputs

- Outputs, I/O Interface: interface to other alarm system or division into locations (e.g. one location per output).
- Input, I/O Interface: a press button to turn off an alarm, i.e. as "Turn off alarm"-input. Place the button on the 2 terminals.
- Output, alarm receiver: activate a siren, a signal lamp.

Assembling the alarm receiver

Depending on the size and layout of the room, one or more alarm receivers can be placed in each room.

Signals from a transmitter in one room can be registered by an alarm receiver located in another room. This probability increases if 2 adjoining rooms are separated by a thin wall, and the alarm receiver and the transmitter are installed on each side of the wall. This "double coverage" has no significance to the system – Piccolo® Server discards additional alarms.

All receivers are powered by PoE from the LAN network. If no PoE supply is available, receivers can be powered directly from a 12-24 VDC power supply.

Therefore the alarm receiver must be placed centrally in relation to the LAN network:

The alarm receiver is screwed to the wall.
 It should be assembled vertical, high up (min. 2 m) and with the connecting cables upwards.
 The higher it is placed, the bigger coverage to the detector is achieved.

- Don't install the alarm receiver behind metal or reinforced concrete, massive stone or granite, as this substantially reduces the coverage.
- Experience shows that a distance of only 30 cm between the alarm receiver and metal/concrete substantially increases the coverage.

The voltage to each alarm receiver must be min. 7V DC.

Disconnection/connection of the system

The system is disconnected via the Piccolo® Server program.

Upgrading the software-licence

The basic version of Piccolo® Server can operate with a maximum of 10 detectors. The software licence has to be upgraded if more detectors are to be applied.

Upgrades are conducted from the Piccolo® Server program by typing in a product key.

The product key is delivered with the software upgrades.

| PICCOLO® | ALARM SYSTEM |
|---------------|--------------|
| SYSTEM STA | TUS: OK |
| Product Key | |
| Key (Level 1) | |
| Key (Level 2) | |
| Key (Level 3) | ••••• |
| Key (Level 4) | |
| | Ok |

Power controller

Piccolo® Server can be connected to a 230 VAC power controller (UPS). Thereby the system will function a number of minutes after a power failure.

Technical specifications

Range

Outside, between detector and alarm receiver:

Max. 1000 m.

Inside, between detector

Typically 50-100 m.

and alarm receiver

Number

Number of detectors per

Max. 200 detectors.*

alarm receiver:

Number of alarm receivers and/or I/O Interfaces per

Max. 128 units.**

system:

Minimum requirements, PC

- Windows 10 pro/server software (64 bit)
- 8 GB RAM
- Minimum Intel Core i5 processor
- Integrated COM-port if interfacing to GSM modem

Set up/programming of the alarm system is conducted from the Piccolo® Server program. The following chapters function as an operating manual.

^{*} Notice: Only 10 detectors in the Piccolo $\mbox{\ensuremath{\mathbb{R}}}$ Server basic version.

^{**} Notice: A maximum of 128 units in total can be coupled per network.

3: Installation, Piccolo® Server program

The Piccolo® PC program gives access to monitoring, set-up and logging of the alarm system.

Installationen consists of 7 steps:

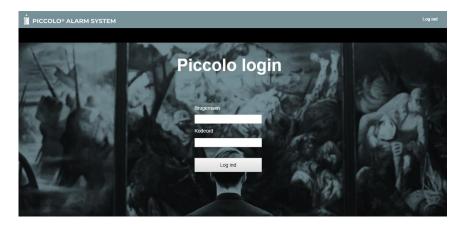
- Pt. 1: Installation af .Net frameworks
- Pt. 2: Activating Internet Information Services (IIS)
- Pt. 3: Set-up of Internet Information Services
- Pt. 4: Installation of Microsoft SQL Server 2014 Express
- Pt. 5: Duplicating Piccolo WEB files to server
- Pt. 6: Installation of Piccolo Server software
- Pt. 7: Creating Piccolo Server database

See separate instructions.

When installation is complete, start Piccolo® Server by activating icon 'Piccoloserver'.

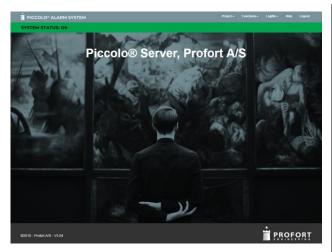


Start a browser and type the address 'http//localhost' or indicate the Piccolo® Server IP address.



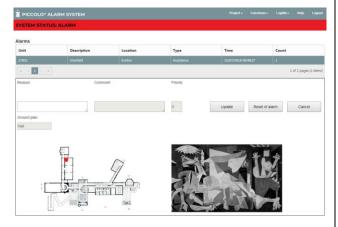
The Piccolo® Server is now up and running, ready for the user to log in and start configuring the system.

4: User Interface



The User Interface of the alarm system is a monitoring screen with menus on top.

In case of no alarms or no technical information, the screen looks like this.



In case of alarm the upper field turns red with the text 'SYSTEM STATUS: ALARM'. A sound (if applicable) is activated and one extra alarm popup windows will be displayed on the screen if the function Alarm popup is activated in the menu Functions > Setup.

The middle field displays a list of registered alarms. The following information is shown:

Unit: The number of the unit.

Description: The object or person the unit is attached to.

Location: The position of the object or person.

Type: Indicates the type of alarm.

Alarm/Count: Date, time and number of alarms.

The alarms can be removed from the monitoring screen by clicking the field 'Reset of alarm' Any sounders will turn off



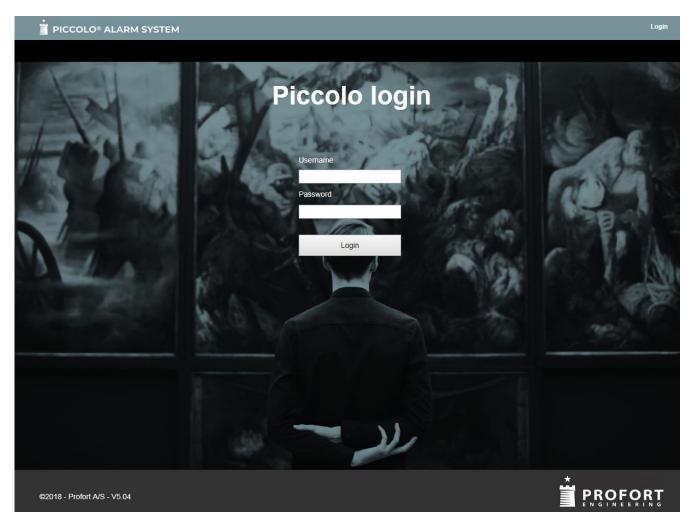
Every 4 minutes the system registers "ok-signals" from transmitters.

If no signal has been registered within a predefined number of minutes, the upper field turns to yellow with the text 'SYSTEM STATUS: WARNING. The number of minutes which passes before the yellow 'Transmitter error'!!! appears in case of no ok-signal is predefined in a setup menu.

The list of transmitter errors can be removed from the monitoring screen by clicking the field 'Remove error'.

5: Access to the system

Access to the system requires a username and a password.



On delivery the system has the following default username and password: **ADMIN** Admin must be entered the first time the system is accessed:

- 1. Select **File > Login**.
- 2. In Login enter **ADMIN** in both Username and Password.
- 3. Click login.

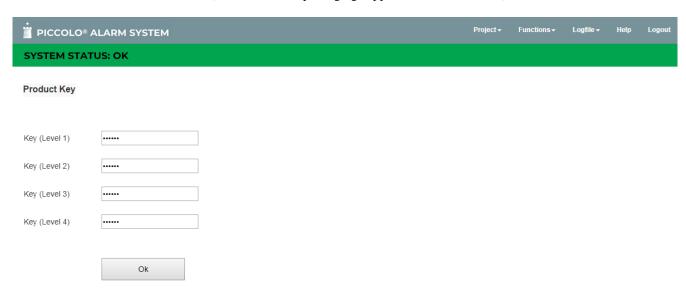
Notice:

- ADMIN (administrator) signifies system administrator. He has access to all
 indexes and functions. Only the system administrator can set up new users
 and has access to product keys.
- At every login the system administrator enters the username ADMIN. Thereby Piccolo® can recognize the system administrator from other users of the system. The default password should be replaced by a new self chosen password.

6: Product Key

The Piccolo® system is delivered with a product key. The product key has a number which has to be entered only once before the alarm system can be used:

- 1. Select **File > Product Key**.
- 2. Type the number of the product key (indicated on the packaging supplied with the software):



3. Click **OK** to close the menu.

Licence upgrades

Piccolo® Server can be upgraded with up to 4 product keys, which enables the system to handle more transmitters than the maximum 10 in the Piccolo® Server basic version.

Product keys are purchased from your distributor.

During upgrading of the Piccolo® Server program, separate instructions has to be followed, but upgrading can be done without losing the original set-up.

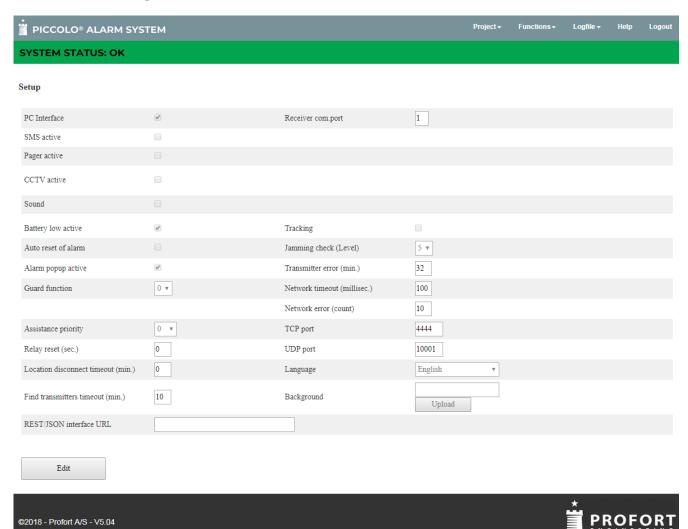
Product keys to Piccolo® Server

| Keys/amount | Max capacity |
|-------------|--|
| 1 key | Max. 10 transmitters (Piccolo® basic version) |
| 2 keys | Max. 50 transmitters |
| 3 keys | Max 500 transmitters |
| 4 keys | Unlimited number |

7: Setup

The menu Setup is central in the installation of the Piccolo® Server system. Before alarm receivers, any GSM-modem, pagers and/or video camera can be connected to the central unit a **com-port** has to be selected for each of these systems:

Select Functions > Setup



- 1. In order to activate the sound signal in Piccolo® Server, activate **Sound**.
- In order to connect GSM-modem:
 Activate [√] SMS active. Type in PIN code
 for SMS sender unit. Type in SMS com-port
 [1] using numbers 1-4
- If only the first alarm is to be sent, activate SMS only first alarm. If blank all alarms will be sent.
- 4. In order to connect pager system: Activate [√]Pager active.
- 5. In order to connect video camera: Activate $\lceil \sqrt{\rceil}$ **CCTV active**.
- In order to receive battery low warning before the battery expires:
 Activate [√] Battery low active.
- 7. For automatic turn off alarm after 5 sec.: Activate $\lceil \sqrt{\rceil}$ Auto reset alarm.

- 8. In order to display a photo of the object and the ground plan: Activate **Alarm popup** active.
- 9. In order to reset the alarm on the monitoring screen only when a quard has pressed the alarm button locally, activate [√] Guard function. Define for how long the siren must stop, when the guard presses the alarm button: 0= The guard function is not in use.
 1-8: The siren stops for 1-8 minutes and starts again after the selected amount of minutes.
 9: The siren stops permanently.
- 10. For indicating the pin code of the SIM-card to the SMS-transmitter/modem, type it in **Pin** code.
- 11. **Signal timeout (sec.)**: Number of seconds that passes before relays in receivers, PC- and I/O interfaces close. 0 (zero) = relays are reset only by user interference.
- 12. **Location disconnect timeout (min):** Define the number that passes from disconnection of locations until they automatically reconnect. 0 (zero) = no automatic connection.
- 13. **Assistance Priority:** The priority specified in the transmitter file is associated with attack. Enter the priority (from -9 to 9) for the alarm type "Assistance" in relation to "Attack".

 0 indicates that assistance and assault have the same priority. -5 defines that the priority for assistance is 5 steps lower than attack. If -9 is indicated, Assistance in the popup window is shown with yellow colour.
- 14. Indicate a number of which **Receiver comport** to be used for PC-interface. Only applicable if PC-interface is used.
- Indicate a number for which SMS comport to be used for SMS-transmitter.
- 16. Indicate with a number 1-4 **Pager com-port** Select baud-speed from menu list.
- 17. Indicate with a number 1-4 **CCTV comport** Select baud-speed from menu list.

- 18. 'Alive' signal to the pager: If a text is entered, the alarm system sends the text to the pager com-port every 30 seconds.
- 19. 'Alive' signal to CCTV: If a text is entered, the alarm system sends the text to the CCTV comport every 30 seconds.
- 20. Activate **tracking** via alarm receivers.
- 21. **Jamming check (Level)**: Define the level of jamming surveillance of all alarm receivers. An alarm will be generated by jamming in a period of: 5: 8 secs., 4: 30 secs., 3: 1 min., 2: 2 mins., 1: 4 mins., and 0: no alarm.
- 22. **Transmitter error (min):** Define the number of minutes that passes before the yellow bar Transmitter error !!! appears in case of lack of ok-signals from detectors. Can be set from 8 to 999 mins. Default setting is 32 mins.
- 23. **Network timeout (millisec):** Define the number of milisecs. where the system, by request, waits for reply from the network. Can be adjusted from 50-999 millisec. Default is 100.
- 24. **Network error (count):** Number of requests from the system to the network without answer before network error is shown. Can be set from 1-99. Default setting is 10.
- 25. Indicate **TCP port** for connected Piccolo® Light, if applicable.
- 26. Indicate **UDP port** for connected PoE receivers and I/O interfaces.
- 27. Language: Select language.
- 28. Click **OK** to close the menu.

The settings in Setup will be explained in the following chapters. An overview can be found via the help menu in the Piccolo® Server program:

- 1. Press the menu **Help**.
- 2. Search in Index > Setup.

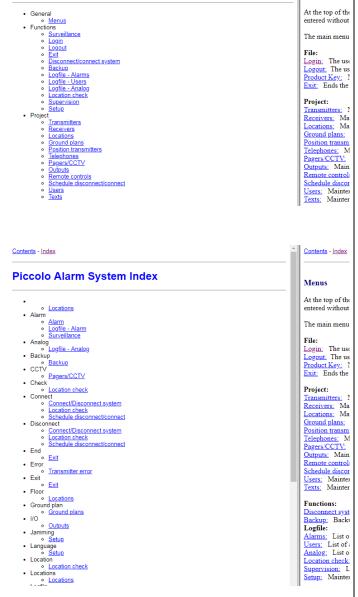
8: Help menu

Contents - Index

The Piccolo® PC-program is equipped with a help menu.

Select **Help >Help Contents**

Piccolo Alarm System Contents



Piccolo® gives 2 search options:

Contents - Index

At the top of the entered without

The main menu

Menus

- A subject search from **Content**.
- A keyword search from Index.

The illustration shows subject search:

- Click a book icon and Open.
- Click on a subject and **Display**.

The search subject will be displayed in a separate window.

Close the window by clicking the red icon on top.

The illustration shows keyword search:

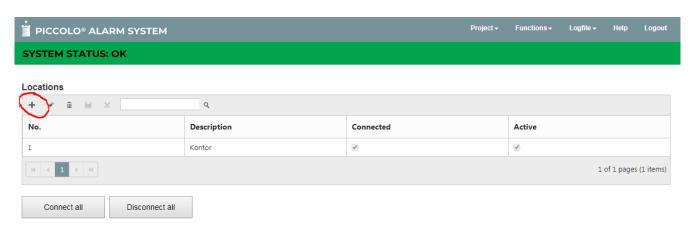
- Type the first letters of the keyword beneath [1] or select from the list beneath [2].
- Click the keyword in the box Found issues and Display.

Notice:

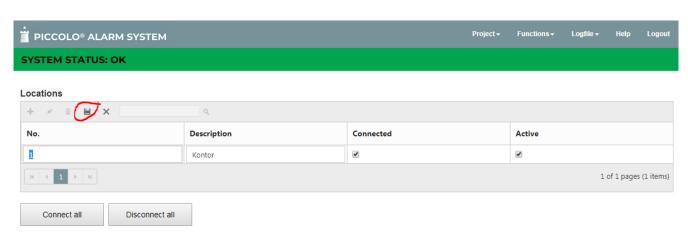
The help menu can also be accessed by pressing the menu **Help**.

9: Set up locations

In the location index the halls, rooms, floors, etc. to be surveyed are registered. Use the '+' key to create a new location.



Press 'Update' to save.



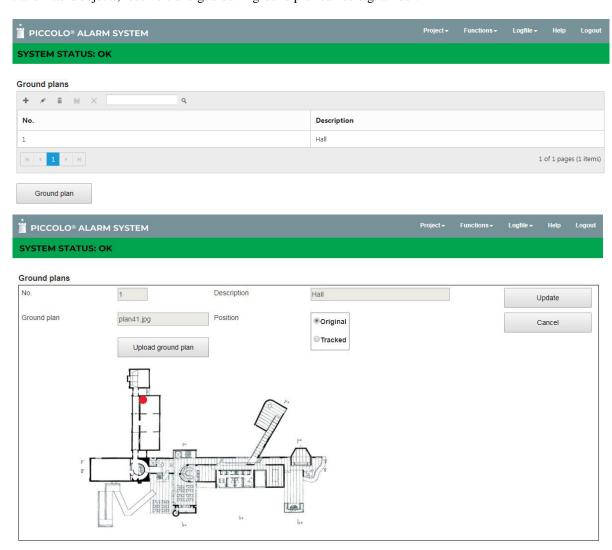
- 1. Select **Project > Locations**.
- 2. Give the location an unequivocal **Number** (1-9999). The number can be used in order to disconnect a location with a remote control.
- 3. Give a **Description** of the location (max. 25 characters).
- 4. **Guard** will only be displayed if the guard function is activated in the menu Setup. Select the individual location $\lceil \sqrt{\rceil}$ if alarms must be acknowlegded locally, before it will be possible to reset the alarm on the monitoring screen.
- 5. Activate the location $[\sqrt{\ }]$ if it is to be watched by the system. If the location is deactivated alarms from transmitters within this location will not be transmitted.
- 6. Click **OK** to close the menu.

Delete a location:

- 1. Click on a location in order for **Number** to be highlighted.
- 2. Press Delete.

10. Set up ground plans

In the index Ground plans can be set up one or more ground plans which graphically display the location of all transmitters/objects, receivers and guards. A ground plan can be e.g. a floor.



Add ground plan:

- 1. Select **Project** > **Ground plans**.
- 2. Enter the number of the ground floor in No.
- 3. Give a **Description** of the ground plan (max. 50 characters) that indicates which part of the building is included in the ground plan.
- 4. In **Picture** insert a graphic display of the ground plan: Press the folder icon to download the required file.

Notice:

The index Ground plan gives a <u>general view</u> of the placement of *all* transmitters, receivers and guards in case of alarm. The location of transmitters is indicated by **red dots**, the location of receivers is indicated by **blue dots**, the location of guards is indicated by **green dots**. By pointing the mouse at a dot the description of the transmitter, receiver, position transmitter or guard will be displayed.

Display the location of guards

To see guards and their position in the specific ground plan the function Guard in the index Transmitters must be activated. The receiver which gets the strongest signal from a transmitter gives an idea of the position of the nearest guard in case of alarm. By pointing at the green dot you will see the description of the guard, e.g. his call number.

Original and tracked position

The index Ground plans has an extra option 'Position', if the option 'Tracking' in the index Setup is set to more than 0.



The position 'Original' means that the transmitter or the guard is displayed by its original location in the ground plan. The position 'Tracking' means that the transmitter or the guard is displayed by its latest tracking location.

Notice:

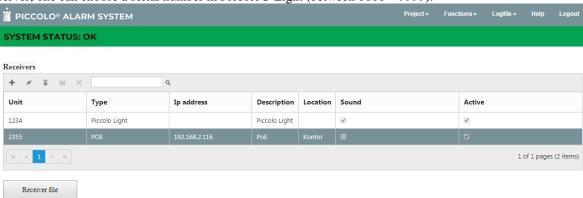
It is only possible to remove the original location of a transmitter, a guard, a receiver or a position transmitter. The tracked position can't be removed.

11: Set up alarm receivers

There are two types of receivers:

- 1. PoE alarm receivers, which are placed on the same LAN as Piccolo® Server
- 2. Piccolo® Light, LAN server

A receiver is created (**Project – receiver**) by typing in information about each one of the receivers serial numbers, type and IP address. Each alarm receiver has its own serial number (see the receiver). In case of a Piccolo® Light LAN server, one can choose a serial number in Piccolo® Light (between 0001 – 9999).



- 1. Select **Project > Receivers**.
- 2. Type the serial number of the alarm receiver in **Unit**.
- 3. Indicate type of receiver (apply RS485 if using an older Piccolo® Max system).
- 4. Indicate the IP address of the unit, if choosing a PoE receiver.
- 5. Give a **Description** of the alarm receiver (max. 50 characters). For example exactly *where in the room* the alarm receiver is placed. If the field is filled in an electrician can easily locate the alarm receiver in case of repairs.
- 6. Indicate the **Location** of the alarm receiver (select from menu list).
- Only used for tracking. Gives the opportunity to adjust (change/increase) the signal on the receiver, e.g. 12% or 6%.
- 8. Mark $[\ \ \]$ **Sound** if internal sounder in the alarm receiver must be activated by an alarm. Often only applied during installation.
- Mark [√] Active. Should only be deactivated in the event of service check, repairs or removal of the alarm receiver.
 Notice: If deactivated alarms from transmitters will not be received.
- 10. Click **OK** to close the menu.

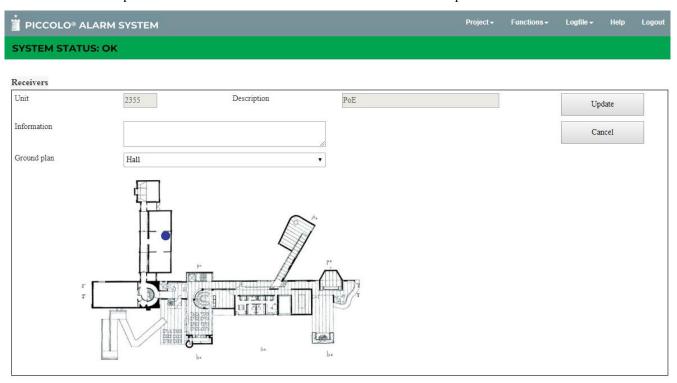
Adjustment of signal strength/receiver signal in connection with tracking

If a receiver has ideal receiver conditions it is more likely that this one "steals" the signal than a receiver with less ideal receiver conditions. Only if the <u>tracking level is set to more than 0</u> it is possible to adjust this relation between receivers by forcing one receiver to be the favourite:

- 1. Select **Project** > **Receivers**.
- 2. In **Adjustment** enter the required adjustment (reduction or increase) of the signal on the receiver. 0% doesn't say that there is 'no signal' but only that there has been no adjustment.

Receiver file

Each receiver can be specified with further information and the information can be updated.



- 1. Select **Project > Receivers**.
- 2. Select receiver **No** in the receiver index.
- 3. Press the icon for **Edit**.

Enter the following:

- 4. In **Description:** describe the receiver (max. 50 characters).
- 5. In **Location:** indicate the location of the transmitter (select from menu list).
- Adjustment: This option is only possible when the option tracking is activated.
 Adjust the signal strength (in percentage), e.g. 12% or 6%).
- Sound: indicate by [√] if the internal sounder in the receiver should activate in case of alarm.
- 8. **Active:** indicate by $\lceil \sqrt{\rceil}$ if the receiver should be activated in the system.

Information

A free text can be written in the field Information (max. 1000 characters), e.g. a message to the staff about what to do in case of alarm.

Select Ground plan

In the field Ground plan it is possible to insert an image illustrating where the receiver is installed. The image is taken from the menu Project > Ground plans.

1. Click the arrow to the right to select ground plan.

Draw the blue dot into Ground plan

2. By using the mouse draw the dot to the required position on the ground plan. Alarm from the receiver will be displayed in a popup window in case of alarm (blue dot).

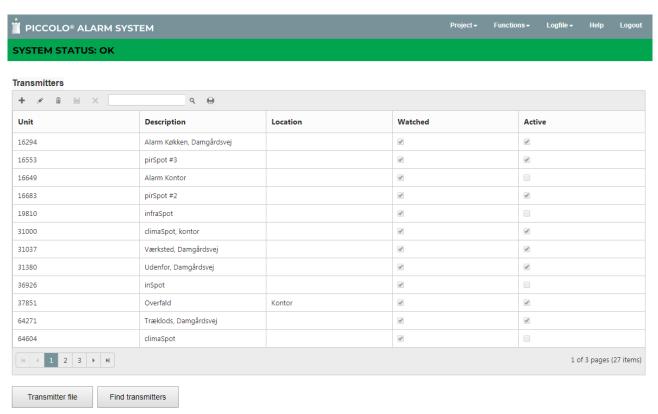
Notice:

The dot is placed where the receiver is mounted. It can be removed by drawing it outside the field Ground plan.

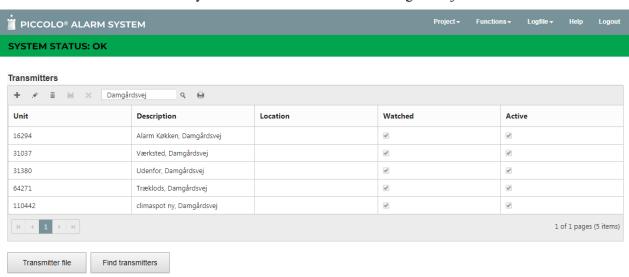
12: Set up transmitters

The transmitter index can be set up by inserting information about the object or the person the transmitter is attached to and/or in which room the object or person is placed. Every transmitter has a unequivocal number (indicated on the transmitter). Another procedure to set up transmitters is to press **Find transmitters** (see next page). Caution !!! By using Find transmitters all active transmitters in the neighbourhood will be registered.

The transmitter index is sorted by number as default. By clicking on a column title (e.g. **description**), the transmitter index will be sorted according to this title.



A keyword can also be used. Here 'Damgårdsvej'.



Set up a new transmitter

- 1. Select **Project > Transmitters**.
- 2. Type the serial number of the transmitter in **Unit**.
- 3. Give a **Description** of the transmitter or person (max. 50 characters) that indicates which object the transmitter is attached to. For instance a name or a title.
- 4. Indicate the **Location** of the transmitter (select from menu list).
- 5. **Vibration:** select from the menu list the level of sensitivity of the seismic sensor on a scale from 0-5. 5 = most sensitive / 1 = less sensitive / 0 = not activated.
- Activate [√] General:
 if the magnet in combiSpot is applied: set a [√]
 if only the seismic sensor in combiSpot is applied:
 do not set a [√]
 Set a [√] if any other transmitter is applied.
- 7. **Guard:** If not activated by a [√] the location of the guards will not be displayed. The option 'Guard' is applied for personal alarm. Activate Guard [√] in order to display all guards from the same ground plan as the object/person in case of alarm.
- 8. Set a [√] in **Watched** (see "Watched" below) if the transmitter is supposed to be watched by the system.
- 9. Set a [√] in **Active** in order to activate the transmitter in the system. Note: If a transmitter is deactivated no alarm messages will be transmitted.
- 10. Click **OK** to close the menu.

Find transmitters

If it is certain which transmitters are attached to which objects, where they are etc., it is not necessary to type in the serial number:

 Click Find transmitters. All transmitters from which a signal is received will automatically be registered. The function takes about 4 min. Caution !!! All active transmitters in the neighbourhood will be registered.

Print

By clicking Print a list with the transmitters in the system will be printed. It is possible to define which transmitters and in which order they should be printed.

Deactivate a transmitter

A transmitter that is not in use during some time can be set on stand-by without having to be set up in the index once again, when it is attached to another object:

Activate the transmitter by typing on the number of the unit. Click the 'Edit' icon and remove [√] in Active to make it disappear. Notice: Remember to save by activating the 'update' icon.

Notice:

The serial number of the transmitter still figures in the index for later use. It is recommended to remove the battery if the transmitter is removed from the object.

Watched

If Watched is marked $[\sqrt]$ an "ok-signal" from the transmitter will be registered every 4th minute. If no signal has been registered within ½ hour this will be considered as a transmitter error.

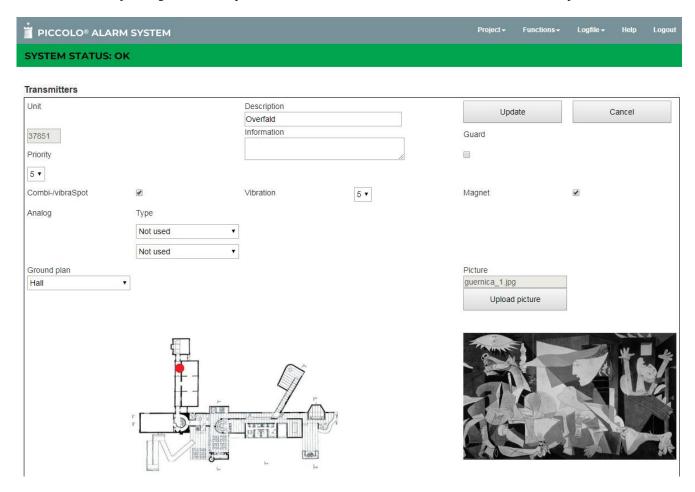
Delete a transmitter

A transmitter that is no longer in use can be deleted from the index.

- 1. Click on the unit number to make it active.
- 2. Press the 'Delete' icon and reply 'Okay'.

Transmitter file

Each transmitter/object or guard can be specified with further information and the information can be updated.



- 1. Select **Project > Transmitters**.
- 2. Select transmitter No in the transmitter index.
- 3. Press **Transmitter File**.

Enter the following:

- 4. In **Description**: give a description of the transmitter (max. 50 characters) that indicates which object or person the transmitter is attached to. For instance a name or a title.
- 5. Indicate the **Location** of the transmitter (select from menu list).
- 6. In **Vibration:** Indicate (select from menu list) the level of the seismic sensor on a scale from 0-5.

5 = most sensitive / 1 = less sensitive / 0 = not activated.

7. Activate $[\sqrt{\ }]$ General:

if the magnet in combiSpot is applied: set a $\lceil \sqrt{\rceil}$ if only the seismic sensor in combiSpot is applied: do not set a $\lceil \sqrt{\rceil}$ Set a $\lceil \sqrt{\rceil}$ if any other transmitter is applied.

- 8. Guard: If not activated by a [√] the location of the guards will not be displayed. The option 'Guard' is applied for personal alarm. Activate Guard [√] in order to display all guards from the same ground plan as the object/person in case of alarm.
- 9. Set a $[\sqrt{\ }]$, if necessary, in **Watched**, if the transmitter is to be watched by the system.

- Set a [√] in **Active** in order to activate the transmitter in the system.
 Notice: If a transmitter is deactivated no alarm messages will be transmitted.
- 11. Choose **Priority** of alarm from the transmitter. Scale 0-9, where 0 is the lowest priority, 5 is default and 9 is highest.

 There is also a difference in the colour of the popup screen where the highest priority is a slightly darker red than the lower.

 In the list of alarms, the highest priority will occur at the top.
- 12. Set a [√] in **Guard acknowledgement** if the transmitter is to be be used for alarm acknowledgement.

Insert an image

In the field Picture it is possible to insert an image of the object or person:

1. Press the folder icon to retrieve the wanted file.

Tracking

In Piccolo® tracking is always active. In some situations it can be necessary to track an object/transmitter, a guard or a personal alarm, e.g.

- In order to retrieve an object that has been removed to a new and unknown location.
- In order to trace which route the object has been brought through the museum.
- In order to trace an alarm from a press button.

Original and tracked position

The index Transmitters has an extra option 'Position' if the option 'Tracked' in the index Setup is set to more than 0.

The position 'Original' means that the transmitter or the guard is displayed by its original location in the ground plan. The position 'Tracking' means that the transmitter or the guard is displayed by its latest tracking location.

The field 'Position' is also displayed in case of alarm. If the object or the guard is placed in the ground plan (red dot = transmitter / green dot = guard) the position 'Original' will be displayed in case of alarm (default setting). If the object or the guard is not placed in the ground plan the position 'Tracked' will be displayed.

Notice: it is only possible to remove the original position of a transmitter or a guard. The tracked position can't be removed.

'Location', 'Ground plan' and the placement of objects/guards follow the selected position.

Note

In the note field it is possible to enter a note (max. 1000 characters).

Analog

In the field 'Analog' it is possible to define values for 2 analog inputs. The first input is for temperature probes. The other input is for other measuring equipment, e.g. air humidity probes or light (lux).

Example: Measuring of temperature

- 1. In the field 'Type': Select TEMP.
- 2. In the field 'Action':
 Select 'Only log' if the value is to be logged and no alarm or warning is to be sent. The log is updated every minute and from both analog inputs.

Select 'Warning' if the yellow field "Transmitter error!!!" is to be displayed on the screen in case that the defined value interval is exceeded. Alarm will not be sent.

Select 'Alarm' if the red field "Alarm!!!" is to be displayed on the screen in case that the defined value interval is exceeded. Alarm will be sent

3. In the field 'Fault (min max)': define the accepted interval, e.g. -20°C to +25°C. If the temperature exceeds the interval the value will

be logged or a warning or alarm will be sent depending on the selected action.

Example: Measuring of air humidity

- 1. In the field 'Type': climaSpot humidity or select 0-10 V (The other options are 0-20 mA, PT1000 or PTC).
- In the field 'Scale (min max)' define the values for the selected probe, e.g. that -20 corresponds to 0 V and 60 corresponds to 10 V. No use of decimals. The values which are entered in advance are default values and can be changed.
- 3. In the field 'Action': Select 'Only Log', 'Warning' or 'Alarm'. See step 2 above.
- 4. In the field 'Fault (min max) the accepted interval is defined, e.g. set min. to 0°C and max. to 30°C. If the value exceeds the interval the value will be logged or a warning or alarm will be sent depending on the selected action.

If none of the analog inputs is to be applied select 'Not used'.

Select Ground plan

In the field Ground plan it is possible to insert an image illustrating where then transmitter is located. The image is taken from the menu Projects > Ground plans.

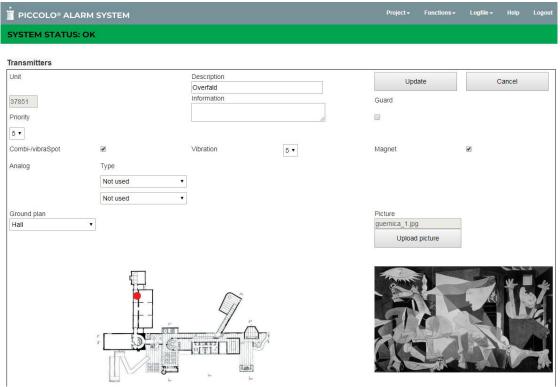
5. Click the arrow to the left to select ground plan.

Draw the red dot into Ground plan

6. First time the dot is placed, click on the ground plan where the dot is to be placed. Alarm from the transmitter will be displayed in a popup window in case of alarm. The dot can be removed by drawing it outside the field Ground plan.

Graphic interface

If a ground plan has been inserted the ground plan can be transferred to the transmitter index. An image of the object or the guard can then be drawn into the ground plan, and its position will be marked by a red dot.



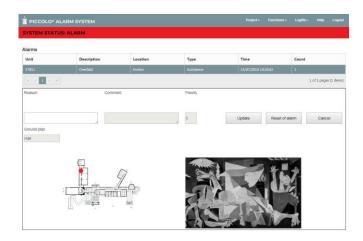
Insert Image:

- 1. Select **Project > Transmitters**.
- 2. Press **Transmitter file**.
- 3. Click the folder icon to search the file.

Insert ground plan:

- 1. Select **Project > Transmitters**.
- 2. Select transmitter No.
- 3. Press **Transmitter file**.
- 4. In the field **Ground plan** insert an image of the ground plan (select from menu list). The image is taken from Project > Ground plans.
- 5. In the field **Picture** click with the mouse and draw the image into the ground plan to the required position.
- 6. Click **Ok** to close the menu.
- 7. Select **Functions** > **Setup** and tick $[\sqrt{\ }]$ in **Alarm popup active**. This denotes the number of active windows.

13: Alarm !!!







If Alarm pop-up is set to display a popup window in Functions > Setup the following window will be displayed. Whether a pop-up should appear can be defined in **Functions** > **Setup**.

If Alarm pop-up active is not set in the index setup, then only the red field Alarm !!! will be displayed.

In the pop-up window, the same note field of the transmitter file can be found. There is also a field called Cause. Here you can write the reason why the alarm went off.

In case of an alarm and you are in another menu the upper field turn into red and you can see the alarms by clicking the logo field:



Turn off alarm

If pop-up windows is applied:

- 1. A pop-up window/alarm can be closed by typing **Cancel**. The red bar will still be showing.
- 2. If **Reset of alarm** is pressed, then the home screen will appear.

If pop-up windows is not applied:

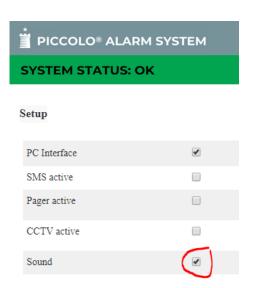
3. Click reset !!!

Reset of alarm

This erases the alarms from the monitoring screen and any sounders turn off. The incident has already been registered in the log file.

Auto alarm reset

If the field Auto reset of alarm is activated $\lceil \sqrt{\rceil}$ in **Functions > Setup** the alarms will automatically be removed after 5 secs.



Notice:

In order to activate the sounder in the PCs where the browser is open by an alarm:

- 1. Select **Functions > Setup**.
- 2. Activate $\lceil \sqrt{\rceil}$ Sound on alarm.

Before the alarm turns off the PC-program allows the possibility to enter a note (see below):

- Activate [√] Pop-up active in Functions > Setup. Select the number of popup windows.
- [1] Only if the PC has a sound card and a loudspeaker.

Write a comment

Before closing the popup window it is possible to enter a note concerning the alarm, e.g. what has caused the alarm or who resets the alarm.

If the popup window doesn't appear automatically double-click in the Unit field in the alarm index.

Piccolo® keeps the note for up to one year

Display the guards

In case of alarm from an object or a personal alarm (red dot) the alarm popup display the guards nearby the alarm situation (green dot) if the guards are set up in the same ground plan as the object.

By pointing with the mouse at the green dot the description of the guard, as it is written in the index Transmitters, will be displayed, e.g. his call number.

Notice: Only the guards within the specific ground plan will be displayed, not guards in other ground plans.

Original and tracked position

By selecting the position 'Original' the transmitter or the guard is displayed by its original location in the ground plan. By selecting the position 'Tracked' the transmitter or the guard is displayed by its latest tracking location.



Guard function

If the function "guard acknowlegdement" is activated in the system this appears on the monitoring screen by a G for "guard".

With this guard function alarms can only be reset centrally on the monitoring screen when the guard has acknowledged the alarm locally. This means that the red bar Alarm!! can be removed only when the guard has acknowledged the alarm in the zone.

When the alarm has been acknowlegded by the guard the siren stops but only for the selected number of minuts whereafter it starts again. The siren will be reset permanently by clicking the red alarm bar.

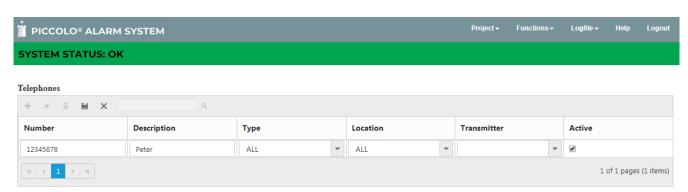
The indication $\lceil \sqrt{\rceil}$ means that the guard has reset the alarm locally. If the alarm hasn't been acknowledged the red alarm bar can't be removeed.

Two alarms from the same location that use the guard function must be acknowledged twice. This means that it is necessary to acknowledge each alarm locally before the red alarm bar can be removed.

÷

14: Telephones

In the telephone index all mobile phones which are due to receive a SMS message in case of alarm are set up. Piccolo® transmits the alarm to the telephone company's service centre. The service centre forwards the message to all numbers on the list. The telephone chain can't be stopped. The text displayed is the one which is typed in the transmitter index.



- 1. Select **Project > Telephones**.
- 2. Type the GSM-number in **Number**.
- 3. In **Description** (max. 50 characters) write e.g. a name or a call number.

Fill in only one of the following 3 fields:

- Fill in **Type** if only one specific alarm is to be sent to the selected telephone number (select from menu list). By selecting **ALL** all types of alarms will be sent to the selected telephone number.
- 2. Fill in **Location** if a SMS is to be sent in case of alarm only from this location (select from menu list). If the option **ALL** is selected a SMS is sent in case of alarm from all locations.
- 3. Fill in **Receiver** if a SMS is to be sent in case of alarm only from this receiver (select from menu list).
- 4. Fill in **Transmitter** if a SMS is to be sent in case of alarm only from this transmitter (select from menu list).
- 5. Activate $[\sqrt{\ }]$ the mobile phone in the system.
- 6. Click **OK** to close the menu.

7. Select **Functions** > **Setup**.

Here either SMS active [note 1] or SMS only first alarm [note 2] is selected.

Notes

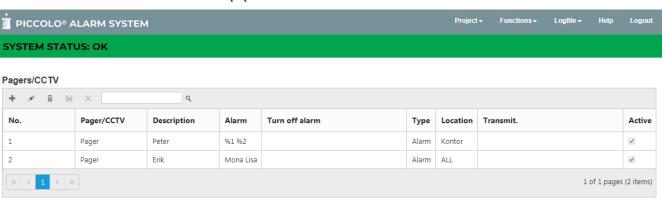
- [1] An alarm message will be sent from *each* transmitter. That means one alarm pr. transmitter.
- [2] Only *one* alarm message will be sent from the *first* transmitter. That means alarms from other transmitters will not be displayed.
 - 8. Make sure that PIN code, SMS com-port and Receiver com-port are filled in.

Notice:

- If there is only *one* number on the list Piccolo® tries to transmit the message every minute until the message has been delivered at the service centre.
- If there are several numbers on the list Piccolo® tries to deliver the message 3 times in total.

15: Pagers

Piccolo® Object protection can activate a pager system, for example **Ascom Nira Line**. In case of alarm a text message will be displayed on a pager. Since the interface to the pager system is simply ASCII values sent to the comport this interface can also be used for other alarm equipment.



- 1. Select **Project > Pagers/CCTV**.
- 2. In **No.** give the pager a number (1-99999).
- 3. Select **Pager** in the field Pager/CCTV.
- 4. In **Description** (max. 50 characters) write e.g. a person name.
- 5. In **Alarm** write the text (max. 100 characters) to be displayed in case of alarm. By using codes the text displayed will be the one which is written in the transmitter index (see examples next page).
- 6. In **Turn off alarm** write e.g. the text to be displayed when the alarm is turned off.

Fill in only one of the following 3 fields:

- Fill in **Location** if a message is to be sent in case of alarm only from this location (select from menu list). If the option **ALL** is selected a message is sent in case of alarm from all locations.
- 8. Fill in **Receiver** if a message is to be sent in case of alarm only from this receiver (select from menu list).

- 9. Fill in **Transmitter** if a message is to be sent in case of alarm only from this transmitter (select from menu list).
- 10. Activate $[\sqrt{\ }]$ the pager in the system.
- 11. Click OK to close the menu.
- 12. Mark $\lceil \sqrt{\rceil}$ Pager active in Functions > Setup.

The signal which is sent to the comport concerned is in **ASCII** format.

| Code | Definition |
|------|---|
| %1 | Assure that the serial number of the transmitter will be displayed. |
| %2 | Assure that the field Description defined in the transmitter index will be displayed. |
| %3 | Assure that the transmitter's Location defined in the transmitter index will be displayed. |
| %4 | Assure that information Attack/assistance from the personal alarm will be displayed. |

The text which is to be sent to the COM-port in case of alarm can be fetched from the transmitter index or a free text defined in the pager index.

Example 1: Write free text in the pager index

- In the field **Description** write the name of the person who is due to receive an alarm message. For example Pedersen.
- In the field Alarm write e.g. which object has generated an alarm and where the object is placed.
 For example "Antique watch in conference room".
- In the field **Transmitter** indicate the serial number of the transmitter. For example 12262.

On the pager (or on the comport as ASCII values) the text "Antique watch in conference room" will be displayed in case of alarm from transmitter unit12262.

The serial number of the transmitter will not be displayed. If the serial number is due to be displayed the code % 1 must be added as free text in the field Alarm.

Example 2: Use text from the transmitter index

• **Description**: Sørensen.

• Alarm: %1 %2.

• Location: hall 1, northern wall.

Sørensen will receive alarm messages from all the transmitters which are placed in the location: hall 1, northern wall.

Because of the codes %1 %2 the transmitter unit 14325 will be displayed followed by the text from the field Description in the transmitter index.

Example 3: Combine code and free text

Description: Jensen.

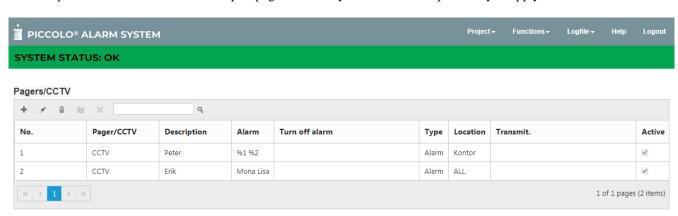
Alarm: %3 Jewel.

• Location: All.

In the field Alarm is added a code (%3) which fetches the text from the field Location in the transmitter index: Hall 3, showcase. This text will be displayed on the pager followed by the free text "Jewel".

16: Video camera/CCTV

The Piccolo® system can be coupled with extra monitoring equipment like video cameras (CCTV). In the CCTV index the records/codes to activate the camera system are set up. The record may be defined by means of numerals or letters. The set up of CCTV is similar to the set up of pagers. The only difference is the possibility to apply an extra interface.



- 1. Select **Project > Pagers/CCTV**.
- 2. In **No.** give the CCTV a number (1-99999).
- 3. Select **CCTV** in the field Pager/CCTV.
- 4. In **Description** (max. 50 characters) write e.g. a translation of the record defined in the fields Alarm and Turn off alarm. For example which object the camera monitors.
- 5. In **Alarm** write a record/code for adjusting the camera angle in case of alarm. For example write a record for the command: Camera 1, position 1.
- 6. In **Turn off alarm** write a record/code for the camera to turn back to neutral angle.

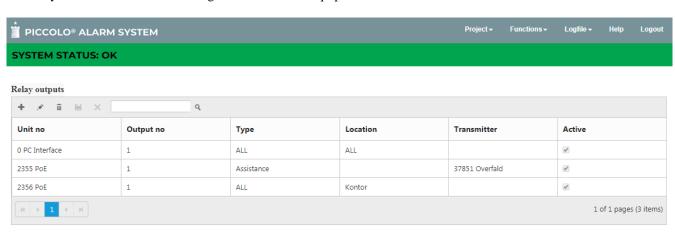
Fill in only one of the following 3 fields:

- 7. Fill in **Location** if CCTV is to be activated in case of alarm only from this location.
- 8. Fill in **Receiver** if CCTV is to be activated in case of alarm only from this receiver.
- 9. Fill in transmitter if CCTV is to be activated in case of alarm only from this transmitter.
- 13. Activate $\lceil \sqrt{\rceil}$ CCTV in the system.
- 10. Click **Ok** to close the menu.
- 14. Mark [√] **CCTV active** in Functions > Setup.

17: Build-in relay output

In every alarm receiver (and in the pc-interface, if used) is an output-relay. The relay can be used for local signalling, for example a signal lamp or a siren that warns if a person approaches or touches a piece of art.

The relays are also used for interfacing to external alarm equipment.



The alarm can come from a location, a receiver or a transmitter. The figure illustrates 3 examples to be regarded separately.

1. Select **Project > Relay outputs**.

Situation 1:

- 2. In **Unit** type the serial number of the central unit (always 0).
- 3. In **Type** select ALL (menu list), all types of alarms can activate the output.
- 4. In **Location** select **ALL** (menu list) [**Note 1**]. That means relay-output 0 will be activated by alarm from all transmitters and receivers.

Situation 2:

- 1. In **Unit** type the serial number of the alarm receiver/relay-output, e.g. 2355.
- 2. In **Type** select e.g. 'Assistance' or 'Attack'.
- 3. In **Transmitter** indicate the serial number of the transmitter (select from menu list). That means relay-output on receiver no. 2355 will be activated by alarm only from transmitter 37851, in this case a personal alarm. Other transmitters will be discarded. Don't fill in the field Receiver.

Situation 3:

1. Alarms only from location "Kontor" generates an alarm on the relay-output of receiver 2355.

Notes

- [1] An operational way to manage an extensive surveillance area may be, in the transmitter index, to set up a whole group of transmitters in one single location and give the location a name.
- [2] A call button is literally pressing a button. A guide during a conducted tour can e.g. call the attendant.

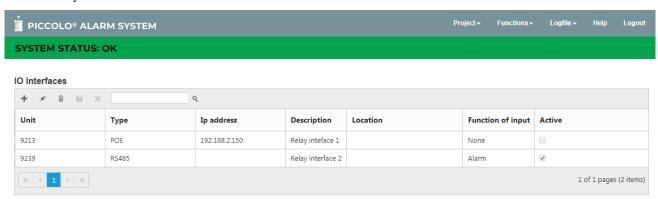
18: External relay outputs

Relay interface:

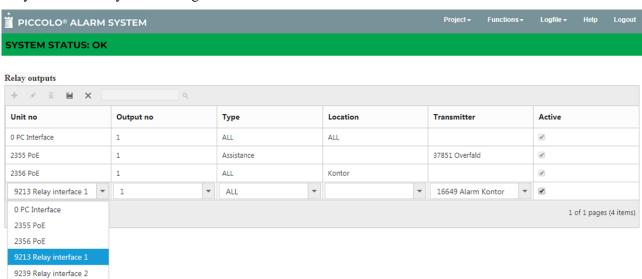
It is posssible to connect extra relay interfaces to the Piccolo Server. Select **Project>IO interfaces**. A relay interface is created (**Project – IO interfaces**) in the same way as receivers.

The 8 relays can be used for interfacing to other alarm equipment, e.g. an alarm central. All 8 outputs can be used individually. Hereby a specific relay can be activated when an alarm comes from a specific location or a specific transmitter. A location is a group of transmitters!

External relay interfaces can be connected via RS485 or PoE like the receivers.



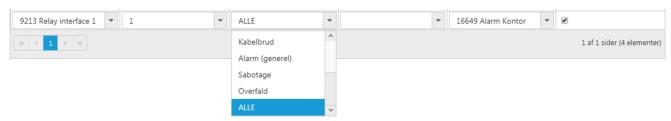
Are one or more relay interfaces connected to the system, it is possible to activate each of the 8 build-in relays. Select a relay interface e.g. serial number 9213.



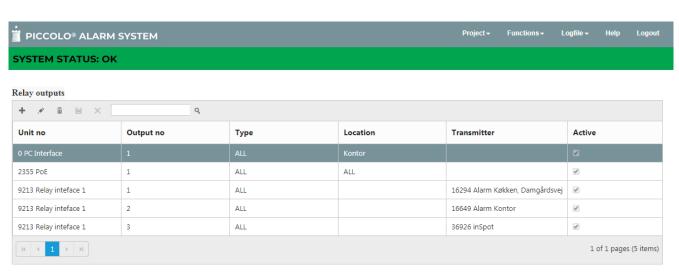
Next, select the relay that must be activates (number 1 to8):



Select the alarm type, that must activate the relay.

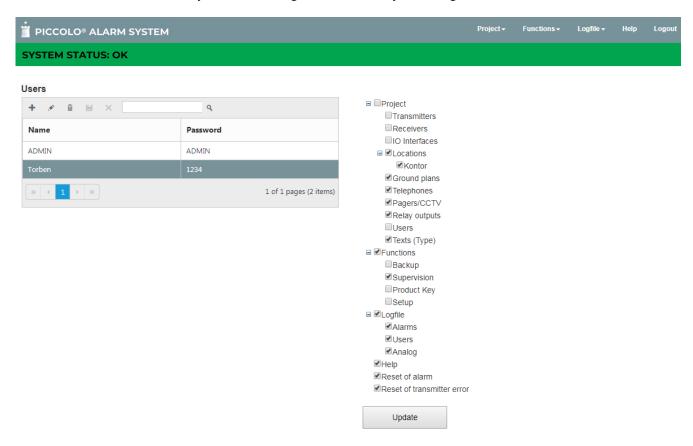


At last you must select whether the relay must activate because of an alarm coming from a location or a transmitter. **Not both!**



19: Set up users

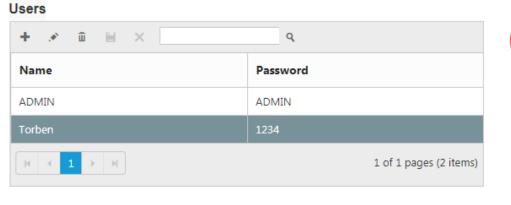
In the user index the users of the system and their rights to access the system is registered.

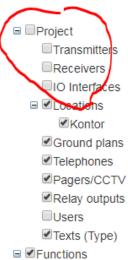


- 1. Select **Project > Users**.
- 2. In **Name** enter username (max. 10 characters).
- 3. Provide the user with a **Password** (max. 10 characters) or leave the field empty. In this case the user has the opportunity to enter a password in File > Login.
- 4. In the list File, Project, Functions etc. it is possible to indicate by a $\lceil \sqrt{\rceil}$ which parts of the system the user is allowed to access. Only the areas which ha a $\lceil \sqrt{\rceil}$ will be accessible when the user logs in with his password. By removing the $\lceil \sqrt{\rceil}$ the access will be blocked.
- 5. Press **Update** to save all changes.

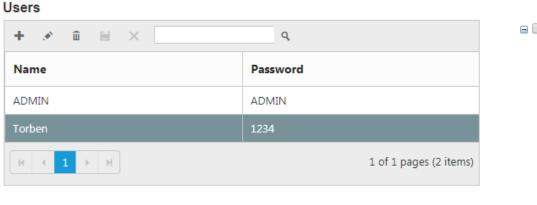
Example 1:

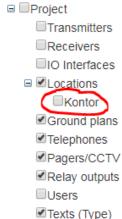
The access to the menu Project is blocked ($[\sqrt{}]$ is removed). The menu Project will not be accessible when the user logs in.





Example 2: The access to the menu Locations is blocked.

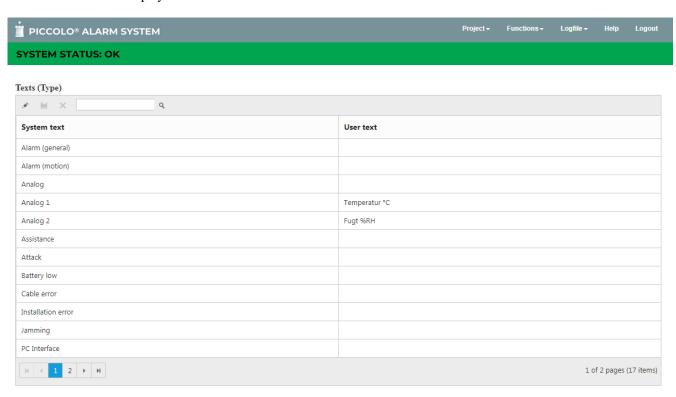




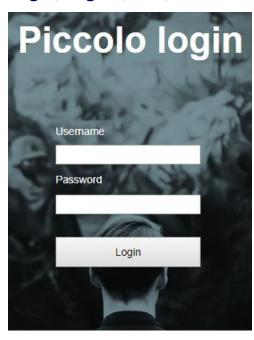
Notice: The system administrator (ADMIN) has unlimited access to all menus. The username ADMIN cannot be replaced by another name or deleted.

20: Set up texts

In the index 'Texts' it is possible to change the system's default texts to user texts. The user texts will be displayed in case of alarm instead of the default texts.



21: Login, Logout, Exit, Connect/Disconnect system



Logout

In order to avoid unauthorized use of the system the user should log out every time he leaves the monitoring screen.

1. Select **File > Logout**.

The monitoring screen is displayed but no access to Project and Functions.

Notice:

- The function Logout doesn't exit the Piccolo® PC-program.
- Alarms will be registered even if no user is logged in.

Disconnect of the complete system

• Select Functions > Disconnect system

When disconnecting the system the monitoring screen disappears and all communication to alarm receivers and other equipment stops.

When connecting the system all communications starts and the monitoring screen will be displayed.

It is possible to disconnect locations separately.

Login

- 1. Select **File > Login**.
- 2. Enter username and password.
- Click Login.

Here a user can set up a password at his first login. However this does not apply if a password has already been set up by ADMIN in the user index.

Notice:

- When logging in any other user will automatically be logged out.
- If a user forgets or wants to change his password the system administrator can either inform or delete the (old) password.
- If ADMIN forgets his password the Piccolo® PC software must be reinstalled.

Exit

This command closes the Piccolo® PC-program and ends the communication with alarm receivers.

Select File > Exit.

Notice:

 Users with level 0 can't close the Piccolo® PCprogram.

Alarms will not be registered during the time when the PC-program is closed.

Remote controls

With a remote control, locations, transmitters and alarm receivers can be disconnected/connected.

This can be done in 2 ways:

- 1. **Select Project > Remote controls**. In **Unit** give the remote control a number.
- 2. In **Description** (max. 25 characters) write e.g. a person name.
- 3. Activate $\lceil \sqrt{\rceil}$ the remote control.

Or click Find remote controls.

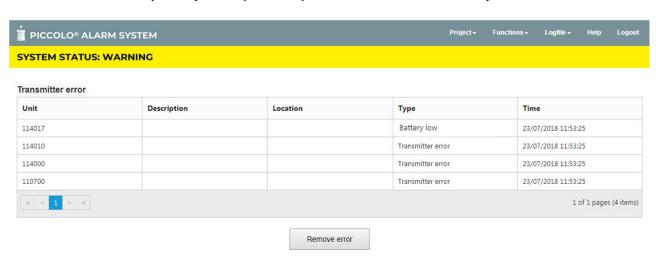
All remote controls on the network will be registered. Thereafter the pager must be activated manually.

22. Transmitter error !!!

If the system hasn't received ok-signals from a transmitter in ½ hour the upper field **SYSTEM STATUS: WARNING** turns yellow. This can be caused by e.g. a defective battery in the transmitter, installations error or the fact that the transmitter is out of reach.

Notice:

The system gives a warning some weeks before the battery has expired **only** if **Battery low** is active in Functions > Setup



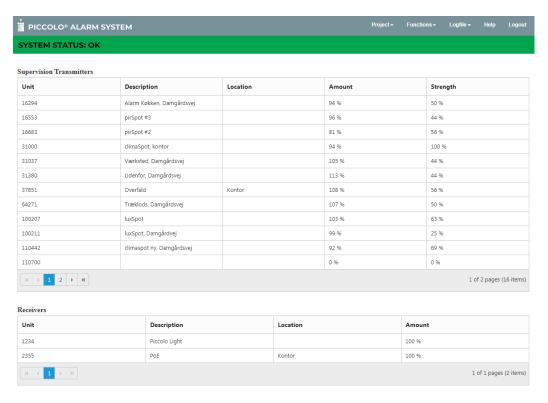
A list displays the serial number of the transmitter, location and date/time of the error. There can be 3 types of errors: transmitter error, battery error or installation error.

- 1. Press **Remove error** in order to remove the list from the screen.
- 2. Press **Ok** to close the menu.

Surveillance of the transmitter- and receiver quality can be conducted continuously by means of the function **Supervision**. Also transmitter error will be logged.

23. Supervision

Supervision is a monitoring facility to be conducted continuously and in case of detecting sudden system errors. The function is also useful in the event of installation as well as the half yearly service check of the Piccolo® system.



Every 4th minute all transmitters transfer an "oksignal" that Piccolo® logs and uses for statistics.

Select Functions > Supervision.
 The list will be displayed on the screen.

Piccolo® continuously updates the list. It displays the amount of received ok-signals from the transmitters.

Furthermore all alarm receivers and Piccolo Lights in the system are displayed.

Amount

Indicates how many ok-signals are transferred every 4th minute. When starting up the amount will slowly rise to 100%. The amount should be between 85%-110%.

Strength

Indicates how strong is the latest signal from the transmitter. The strength should be higher than 25%.

Indicates, if GSM modem is installed, how good is the connection to the GSM net. The signal strength should be more than 25 percent. If this is not the case an external GSM-antenna should be applied.

Receivers:

Shows whether all communication to all receivers are acknowledged. 100& means all and 90% means that one in ten communication to receiver fails.

Possible causes of malfunction

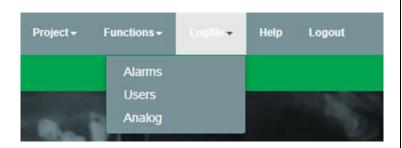
Transmission- and receiving conditions

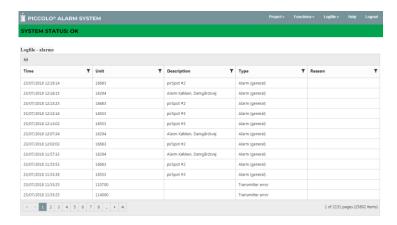
- Defective battery or transmitter.
- Too big a distance between transmitter and receiver.
- Location: alarm receiver near e.g. reinforced concrete, metal, massive granite- or stone wall, and transmitters near a ventilating plant significantly reduce the conditions.
- Defective cable connection.

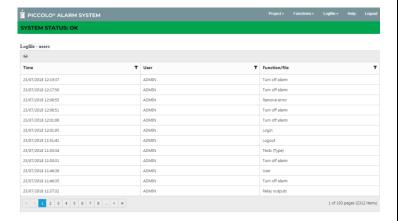
GSM signal strength

24. Log file

Piccolo® automatically keeps a log file with alarm- and user history. The information goes back one year and can neither be modified nor deleted.







- 1. Select **Functions > Log file**
 - > Alarms.
 - > Users.
- 2. Click **Update** in order to display the latest registered alarms.
- 3. Click **Ok** in order to close the menu.

Log file - Alarms

In this history information about a specific alarm can be found. **Date**, **time** and **number** of the unit which has caused the alarm are displayed.

In addition to a **Description** of the unit it appears which **Type** of alarm has been generated. Also the **Note**, if any has been entered before turning off the alarm, will be displayed.

Click **Print** to print the log file. To sort the list by date click the column title **Time**. To sort the list by unit click the column title **Unit**.

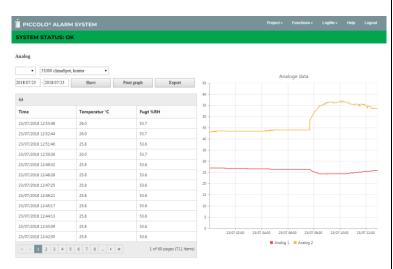
Log file - Users

In this history information about all functions carried out by users as well as changes in indexes during the last year can be found.

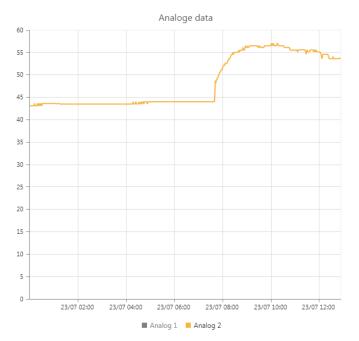
Date and **time** as well as which **User** has performed the act will be displayed.

Notice:

 In the log file it is possible to change the way in which the information is sorted by clicking one of the grey column titles.







Log file - Analog

In this history information about analogue measuring can be found. It requires that the applied detectors with analogue inputs don't use the option 'Not applied' (See 'Analog' in the transmitter index).

The information is in a list and shows the time for when an analog value has been registered.

With the option 'Date' it is possible to see the information in a specific time interval. Press 'Show' in order to see a graphical illustration and a table of the values.

'**Print list**': The log information is printed as a list to a printer.

'**Print graph**': The log information is printed as a graph to a printer.

By clicking on one measurement (here: analog 1) this curve becomes 'invisible' and only analog 2 is displayed.

25: Service and maintenance

Half-yearly check

Every six months it must be checked whether all detectors can be activated.

- Print a list with all detectors from the transmitter index.
 Click for instance the column titles **Location** or **Unit** in order to sort by these columns.
- 2. Go round to all detectors and activate each one of them.
- 3. Check in **Log file alarms** if there has been registered an alarm from the activated detectors.

If there are detectors which didn't send an alarm the battery must be changed. If this doesn't help the detector must be replaced.

Change battery in detector

After max. 5 years the battery in the detector should be changed. This is done by loosening the screws. Gently push the battery out of the clip.

Test of GSM modem

In connection with the half-yearly service check it must be tested whether the SMS modem, if any, works.

This is done from e.g. the telephone index by setting up a GSM telephone number. Then a detector is activated and eventually it is checked whether the alarm message has been delivered as required.

If no alarm has been transmitted it should be checked in Supervision whether the GSM covery is sufficient. Notice: It should be higher than 25%.

Backup

Backup should be performed frequently or at least when significant changes in data files have been made.

This function makes a copy of all file data to a disc or to a drive. If using a disc, this is inserted in disc drive A.: The disc must be empty and with no write protection.

Notice:

The alarm system must be disconnected during backup and alarms, if any, will not be received. Alarms will be displayed after the backup is finished.