



# Forteza Integration Module Settings Guide

ACFA PSIM 1.1

Last update 05/03/2024

## Table of Contents

<b>1</b>	<b>List of terms used in Forteza integration module Settings guide .....</b>	<b>3</b>
<b>2</b>	<b>Introduction into Forteza integration module Settings guide .....</b>	<b>4</b>
2.1	Purpose of document .....	4
2.2	General information about Forteza integration module .....	4
<b>3</b>	<b>Supported hardware and licensing of the Forteza module .....</b>	<b>5</b>
<b>4</b>	<b>Configuring Forteza integration module .....</b>	<b>8</b>
4.1	Forteza integration module set up procedure .....	8
4.2	Activation of Forteza integration module.....	8
4.3	Automatic creation of the object tree in Forteza PID.....	8
4.4	Configuring Forteza base sensor.....	9
4.5	Configuring Forteza one-position sensor .....	11
4.5.1	Configuring area of Forteza one-position sensor.....	12
4.6	Configuring Forteza two-position sensor .....	13
4.7	Configuring LED spotlight.....	14
4.8	Configuring Forteza-Controller .....	16
4.8.1	Configuring Forteza-Controller relay .....	16
4.9	Configuring Forteza-M two-position sensor .....	17
<b>5</b>	<b>Working with Forteza PID integration module .....</b>	<b>19</b>
5.1	General information about working with Forteza integration module .....	19
5.2	Controlling Forteza base sensor.....	19
5.3	Controlling Forteza one-position sensor .....	20
5.4	Controlling Forteza two-position sensor .....	20
5.5	Forteza-Controller states.....	22
5.6	Controlling Forteza-Controller relay.....	23
5.7	Controlling Forteza-M two-position sensor.....	24

# 1 List of terms used in Forteza integration module Settings guide

Perimeter Intrusion Detection System (PID) is a hardware-software system used to control perimeter violation.

*Axxon PSIM* Server is a computer with installed *Axxon PSIM* software (**Server** configuration).

Forteza sensors are annunciators used to secure premises and perimeter zones (depending on the type of a connected sensor) and to notify about alarm when a violator enters the area.

*Zebra* sensor is a single-ended radio-wave annunciator used to secure perimeter zones, outdoor and indoor sites, storage facilities, tunnels, viaducts and to notify about alarm when a violator enters the area.

## 2 Introduction into Forteza integration module Settings guide

### On the page:

- [Purpose of document](#)
- [General information about Forteza integration module](#)

### 2.1 Purpose of document

The *Forteza integration module Settings guide* is a reference guide for users of the *Forteza* module that is a part of *ACFA PSIM* software package.

The guide provides:

1. general information about *Forteza module*;
2. information about how to configure *Forteza module*;
3. information about how to work with *Forteza module*.

### 2.2 General information about Forteza integration module

*Forteza* software module is a part of *ACFA PSIM* software package. It configures and enables interaction between *ACFA PSIM* and *Forteza PID* (manufactured by JSC "Ohrannaya Technika").

 **Note.**

For more information about *Forteza PID*, please refer to official documentation for this system.






Before configuring *Forteza PID* integration module, do the following:

1. install *Forteza PID* hardware at the site (see vendor documentation);
2. connect *Forteza PID* to Server.

### 3 Supported hardware and licensing of the Forteza module

<b>Manufacturer</b>	Okhrannaya tehnika, LLC E-mail: <a href="mailto:info@forteza-eu.com">info@forteza-eu.com</a>
<b>Integration type</b>	Low-level protocol
<b>Equipment connection</b>	RS-485

#### Supported equipment

Equipment	Function	Features	Photo
Forteza-Adapter	Adapter of external devices	Converts signal from voltage free output to RS-485 interface  Provides possibility of connection two detecting devices	
Forteza-Controller	Controller of executive devices	Provides control of two devices, transmitting information about relay contact state	
FM Series	Microwave monostatic sensors	Division of detection area into 12 sub zones  Several modifications with length of detection area for 84, 60, 30 m.  Authorized access by disabling sub zones	
Forteza series	Microwave bistatic sensors	Several modifications with length of detection area for 500, 300, 100, 50 m.  Up to four-frequency letters – eliminates ambient illumination from other sensors  Working frequency 24 GHz	
Security Light LED series	LED seachlight	Control of lighting level  Missing of ambient illumination of video surveillance cameras by means of directed focused lighting  Continuous light flux in all range of power supply  Resistant to low input voltage drops	

Equipment	Function	Features	Photo
MIR-M series	Dual-technology monostatic sensors	<p>Several modifications with length of detection area for 30, 10 m.</p> <p>High survivability</p> <p>Two different physical principles of detection are applied: monostatic microwave and monostatic infrared</p> <p>Division of detection area into 12 sub zones</p>	
RELIEF series	Wire&Wave sensor	<p>Self-diagnostic and fault indication modes are supported</p> <p>Ability to install on all types of barriers</p> <p>Protection of fences of complex configuration, tracking relief and perimeter turns</p>	
MIR-B series	Dual-technology bistatic sensors	<p>Several modifications with length of detection area for 50, 100 m.</p> <p>High survivability</p> <p>Two different physical principles of detection are applied: microwave and active infrared</p> <p>Ultra narrow detection area</p>	
LIANA series	Vibration sensor	<p>Registration and analysis of the signal from the mechanical vibrations of the fence when attempting to take it or destroy it (climbing, sawing, cutting the fence)</p> <p>Registration and analysis of the signal from the deformation or vibration of the ground (when digging under the fence)</p> <p>Stability of the product characteristics, high level of detection, interference immunity</p>	

### License Protection

Per 1 COM-port.

No more than 32 devices can be connected to one COM-port.

Forteza-Adapter converts the signal from the dry relay contacts to the RS-485 interface. Two sensors can be connected to one Forteza-Adapter. Dry contacts from the sensors connect to Forteza-Adapter, and information about the dry contacts state is transmitted via the RS-485 interface from the adapter to *Axxon PSIM*.

Forteza-Controller is intended for connecting actuators to the security system and controlling them with the "normally-open" relay contacts. For example, a siren is an actuator.

## 4 Configuring Forteza integration module

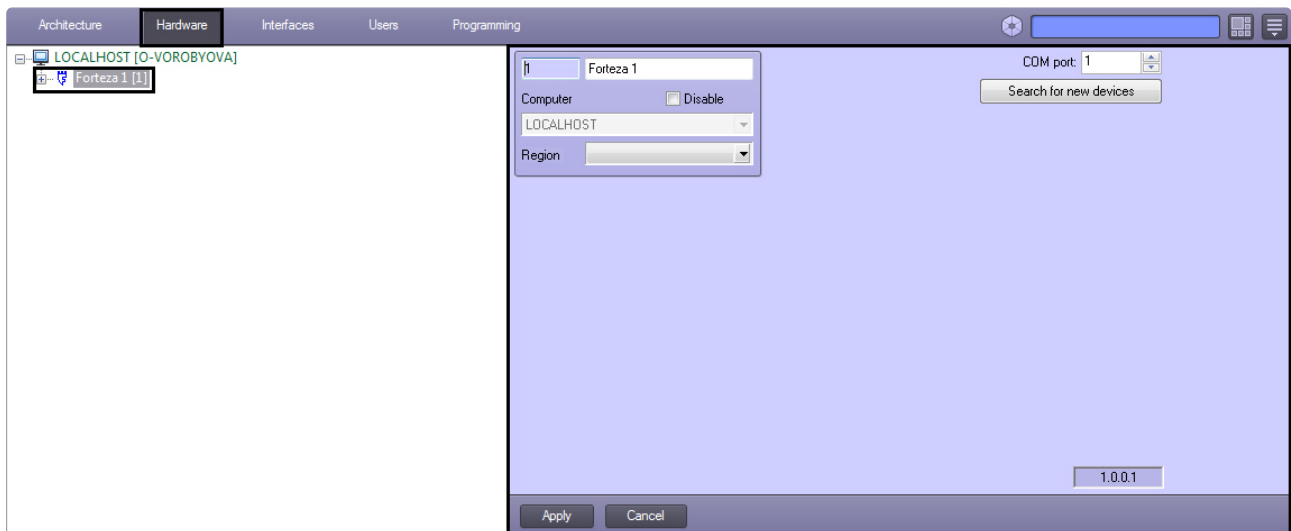
### 4.1 Forteza integration module set up procedure

*Forteza* PID integration module is configured in *ACFA PSIM* as follows:

1. [Activation of \*Forteza\* integration module.](#)
2. [Automatic creation of the object tree.](#)
3. [Configuration of \*Forteza\* sensors.](#)

### 4.2 Activation of Forteza integration module

In order to activate *Forteza* integration module create a **Forteza** object under the **LOCALHOST** object in the **Hardware** tab of the **System settings** dialog box.



**Note.**

An integration module version is shown on the **Forteza** settings panel.

PID *Forteza* integration module is now activated.

### 4.3 Automatic creation of the object tree in Forteza PID

When the object tree is created automatically, there is the search for devices connected to the Server and corresponding objects are created under the **Forteza** object in *ACFA PSIM* object tree.

Automatically create the object tree as follows:

1. Go to the **Forteza** object settings panel.



2. In the **COM port** field specify the number of the COM port for connecting the *Forteza PID* (1).

**Note**

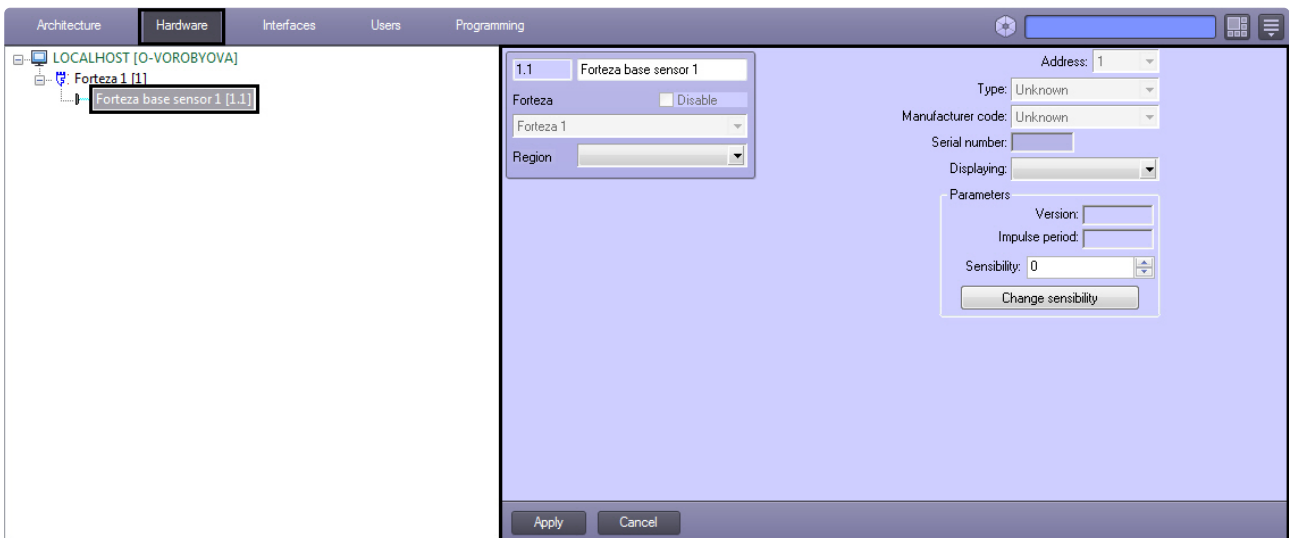
If the *Forteza PID* is connected to *ACFA PSIM* using a serial interface converter, it is necessary to specify the number of the virtual COM port.

3. Click the **Apply** button (2).
4. Click the **Search for new devices** button for configuration reading and automatic creation of the object tree (3).

Automatic creation of the object tree is completed.

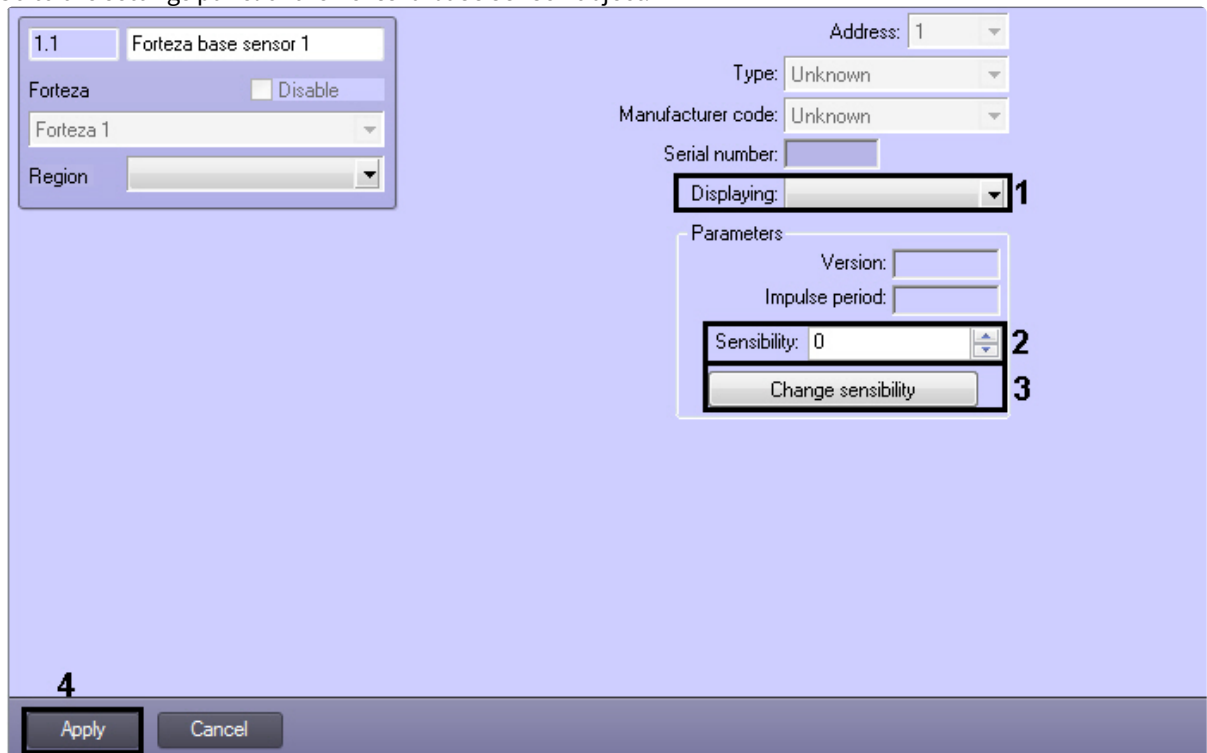
## 4.4 Configuring Forteza base sensor

In *ACFA PSIM* the *Forteza* base sensor is configured on the settings panel of the **Forteza sensor** object. This object is created under the **Forteza** object in the **Hardware** tab of the **System settings** dialog box.



Configure *Forteza* base sensor as follows:

1. Go to the settings panel of the **Forteza base sensor** object.

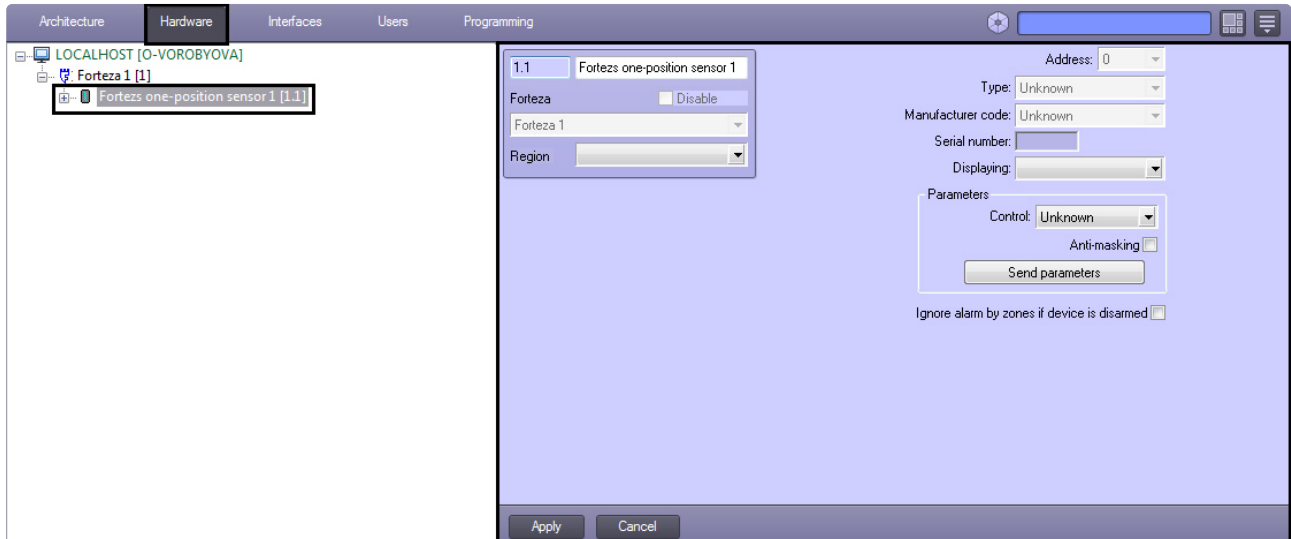


2. From the **Displaying** drop-down list select set of icons corresponding to base sensor (1).
3. In the **Sensibility** field specify level of sensor sensibility (2).
4. Click the **Change sensibility** button (3).
5. Click the **Apply** button to save changes (4).

*Forteza* base sensor is configured.

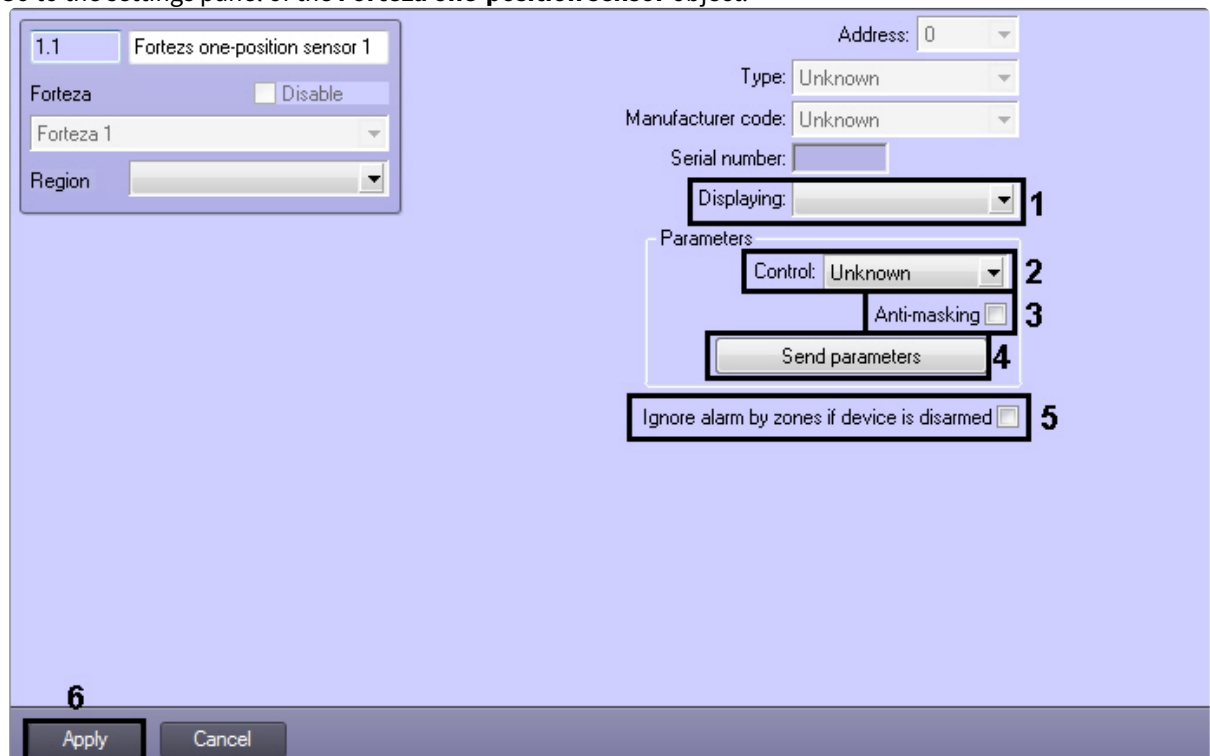
## 4.5 Configuring Forteza one-position sensor

In *ACFA PSIM* the *Forteza* one-position sensor is configured on the settings panel of the **Forteza one-position sensor** object. This object is created under the **Forteza** object in the **Hardware** tab of the **System settings** dialog box.



Configure *Forteza* one-position sensor as follows:

1. Go to the settings panel of the **Forteza one-position sensor** object.



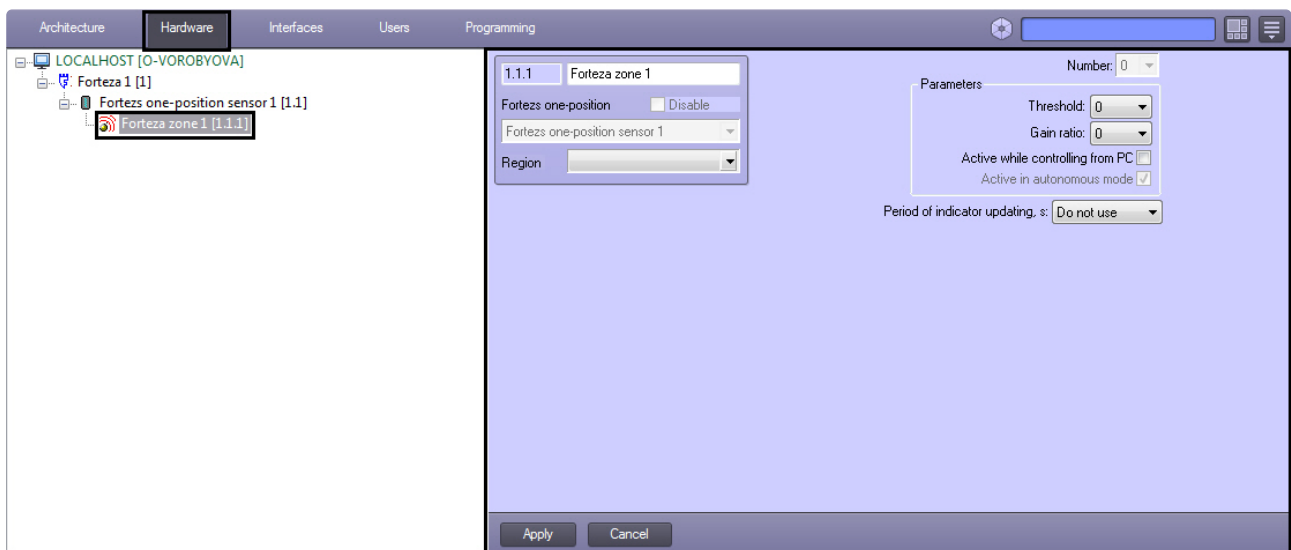
2. From the **Displaying** drop-down list select set of icons corresponding to one-position sensor (1).
3. From the **Control** drop-down list select the way of sensor control. It's possible to control sensor independently or using a computer (2).

4. If an alarm event is to be generated in the system when an attempt to cover sensor with reflecting layer is detected, set the **Anti-masking** checkbox checked (3).
5. To send parameters to device click the **Send parameters** button (4).
6. If it's required to ignore alarm events when device is disarmed, set the corresponding checkbox (5).
7. Click the **Apply** button to save changes (6).

*Forteza* one-position sensor is configured.

#### 4.5.1 Configuring area of Forteza one-position sensor

In *ACFA PSIM* the area of the *Forteza* one-position sensor is configured on the settings panel of the **Forteza zone** object. This object is created under the **Forteza one-position** object in the **Hardware** tab of the **System settings** dialog box.

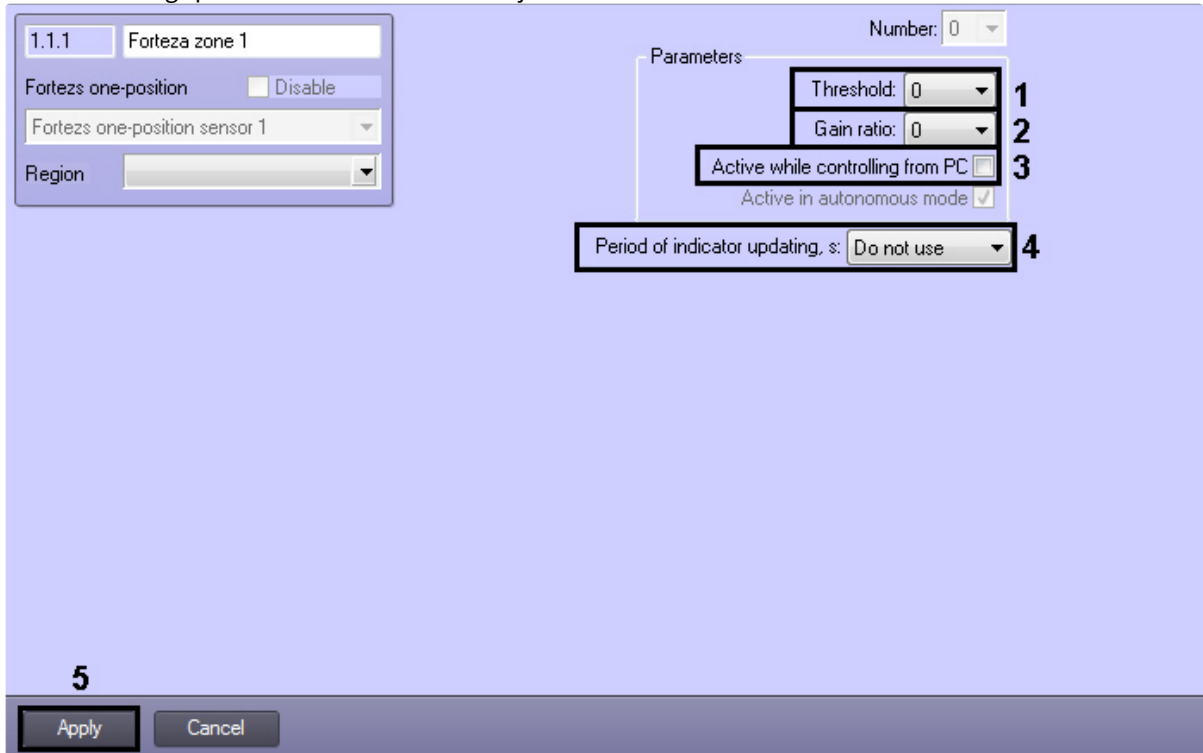


**Note.**

*Forteza* one-position sensor supports 12 areas.

Configure area of *Forteza* one-position sensor as follows:

1. Go to the settings panel of the **Forteza zone** object.

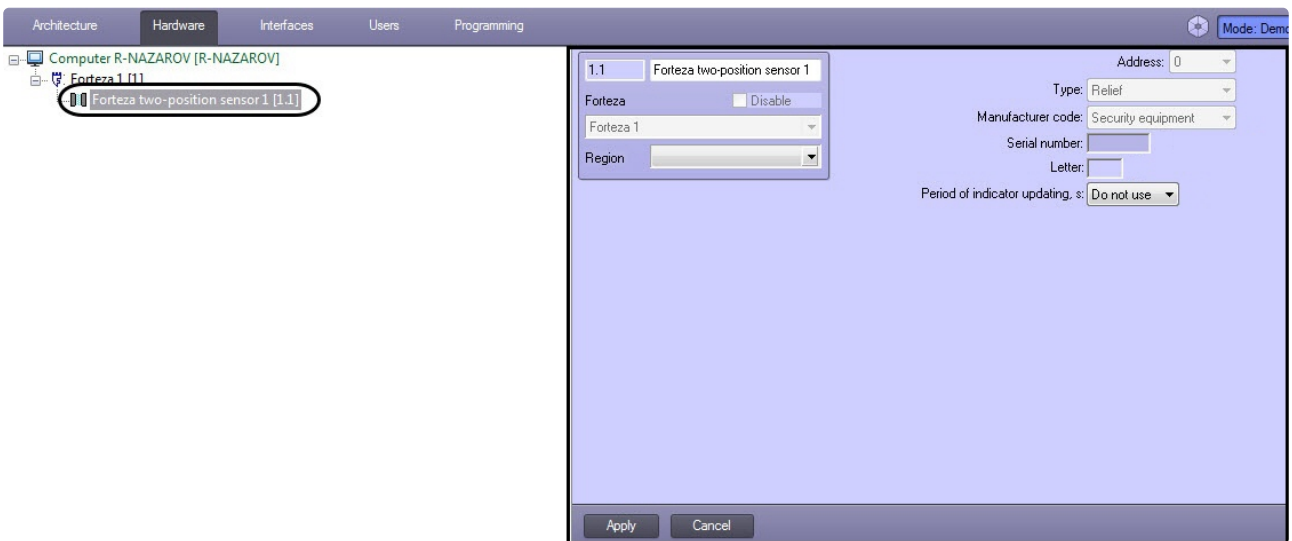


2. From the **Threshold:** drop-down list select value of sensibility threshold (1).  
The minimum sensitivity of the sensor corresponds to the maximum value of the **Threshold** parameter, i.e. the bigger the value of this parameter, it is more probable that alarm event will be skipped.
3. From the **Gain ratio:** drop-down list select value of area sensor signal gain (2).
4. If it's required to receive events from the area while controlling from PC set the corresponding checkbox (3).
5. Specify the period of indicator updating in seconds (4). Select the **Do not use** value if updating is not required.
6. To save changes click the **Apply** button (5).

Area of *Forteza* one-position sensor is configured.

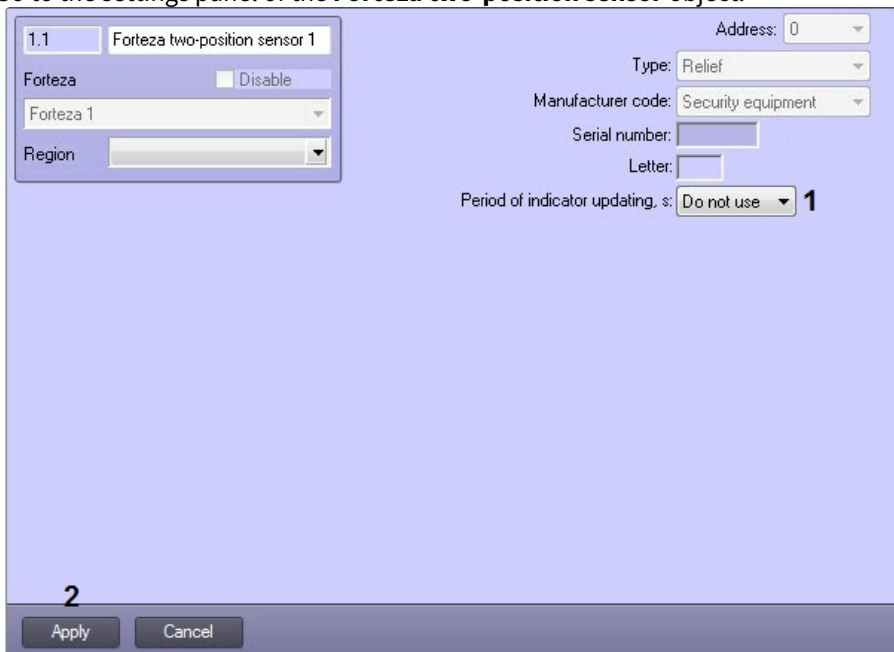
## 4.6 Configuring Forteza two-position sensor

In *ACFA PSIM* the *Forteza* two-position sensor is configured on the settings panel of the **Forteza two-position sensor** object. This object is created under the **Forteza** object in the **Hardware** tab of the **System settings** dialog box.



Configure *Forteza* two-position sensor as follows:

1. Go to the settings panel of the **Forteza two-position sensor** object.

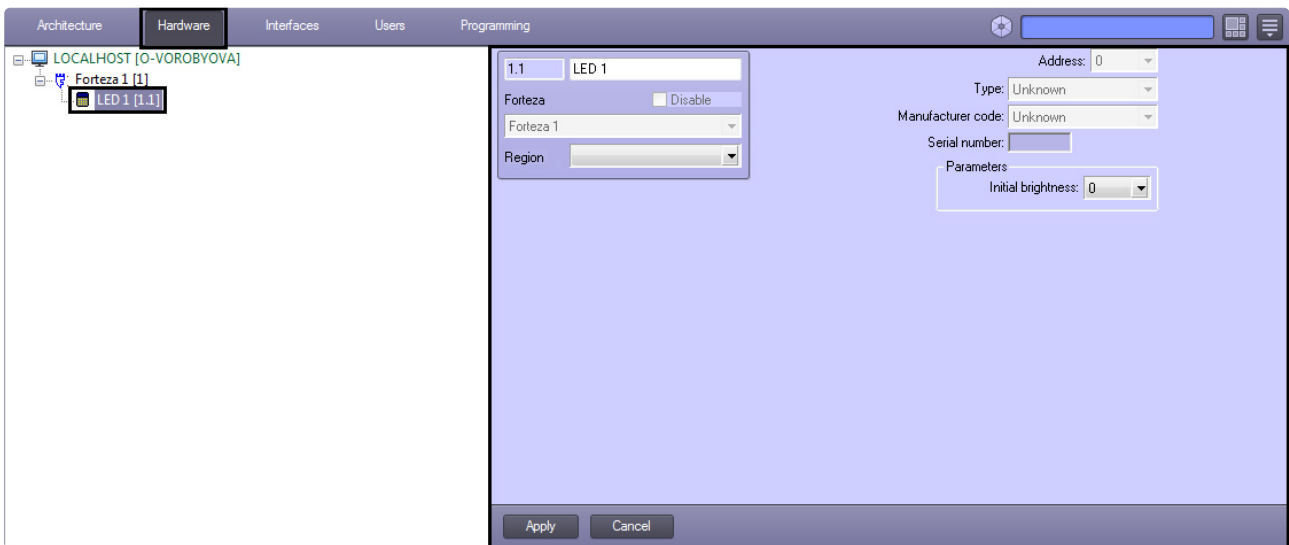


2. Specify the period of indicator updating on the Map, in seconds (**1**). Select the **Do not use** value if updating is not required.
3. To save changes click the **Apply** button (**2**).

*Forteza* two-position sensor is configured.

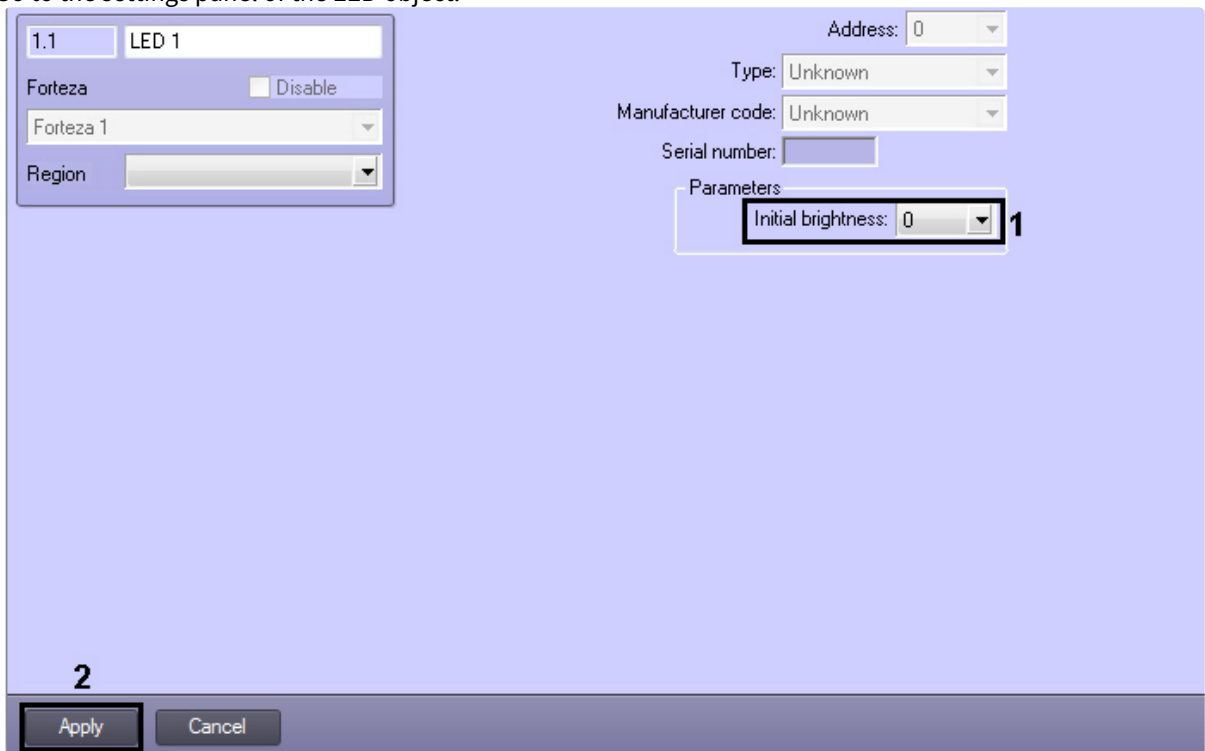
## 4.7 Configuring LED spotlight

In *ACFA PSIM* the LED spotlight is configured on the settings panel of the **LED** object. This object is created under the **Forteza** object in the **Hardware** tab of the **System settings** dialog box.



Configure LED spotlight as follows:

1. Go to the settings panel of the **LED** object.

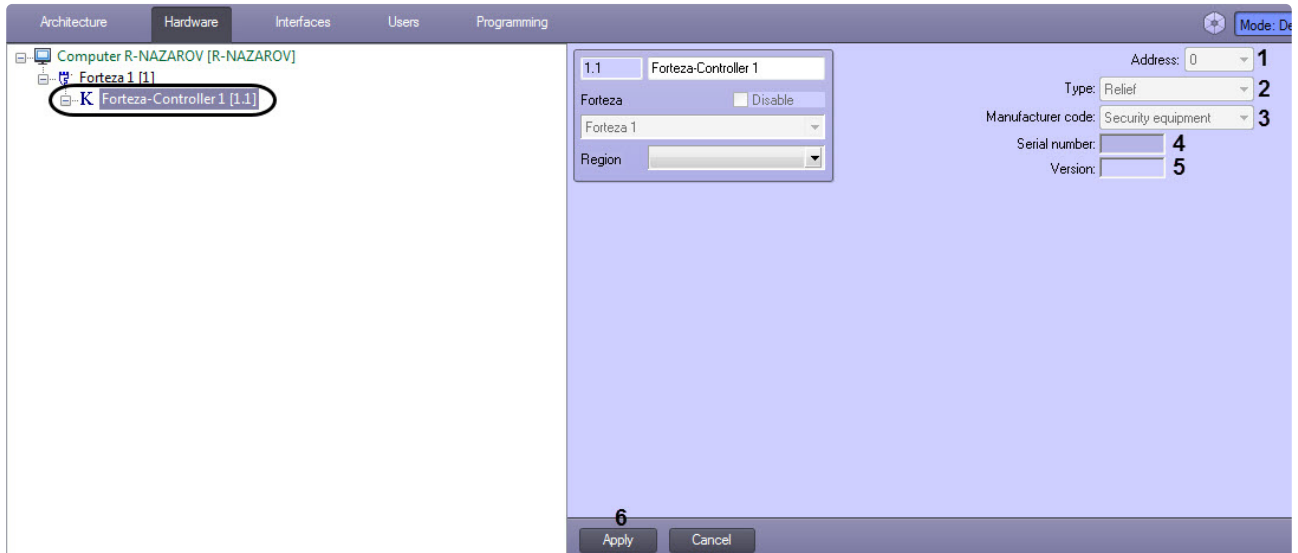


2. From the **Initial brightness** drop-down list select the value from 0 to 255 corresponding to initial brightness of LED spotlight (1).
3. Click **Apply** button to save changes (2).

LED spotlight is configured.

## 4.8 Configuring Forteza-Controller

The *Forteza Controller* is not configured on the settings panel of the **Forteza-Controller** object. The settings panel presents information read from the controller at its connection:



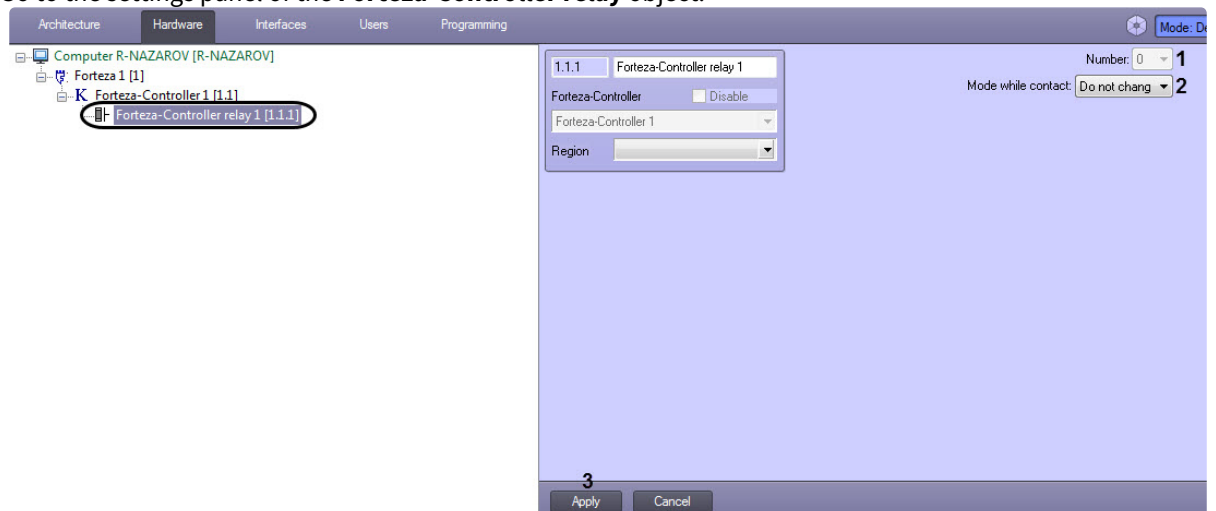
1. The **Address** field displays ID of COM port to which the controller is connected (1).
2. The **Type** field displays controller series (2).
3. The **Manufacturer code** field displays manufacturer's codename (3).
4. The **Serial number** field displays serial number of the controller (4).
5. The **Version** field displays controller firmware version (5).

### 4.8.1 Configuring Forteza-Controller relay

In *ACFA PSIM* the *Forteza-Controller relay* is configured on the settings panel of the **Forteza-Controller relay** object. This object is created under the **Forteza-Controller** object in the **Hardware** tab of the **System settings** dialog box.

Configure *Forteza-Controller relay* as follows:

1. Go to the settings panel of the **Forteza-Controller relay** object.



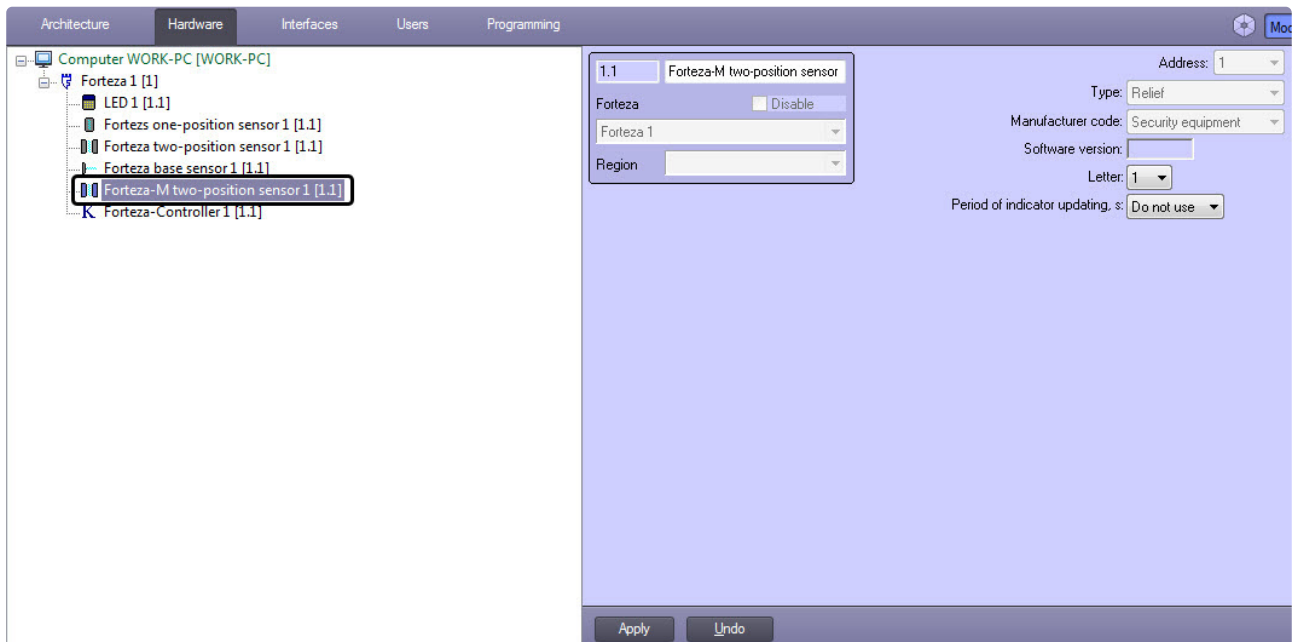
2. Field **Number** (1) can not be changed.

3. From the **Mode while contact:** drop-down list select the mode of relay operation (2):
  - a. Do not change – mode of relay is not changed while connection to device.
  - b. Enabled – relay is enabled while connection to device.
  - c. Disabled – relay is disabled while connection to device.
4. To save changes click the **Apply** button (3).

*Forteza-Controller relay is configured.*

## 4.9 Configuring Forteza-M two-position sensor

In *ACFA PSIM* the *Forteza-M* two-position sensor is configured on the settings panel of the **Forteza-M two-position sensor** object. This object is created under the **Forteza** object in the **Hardware** tab of the **System settings** dialog box.



Configure *Forteza-M* two-position sensor as follows:

1. Go to the settings panel of the **Forteza-M two-position sensor** object.

1.1 Forteza-M two-position sensor

Forteza  Disable

Forteza 1

Region

Address: 1

Type: Relief

Manufacturer code: Security equipment

Software version:

Letter: 1

Period of indicator updating, s: Do not use

Apply Undo

2. Select the frequency letter of the sensor (1).
3. Specify the period of indicator updating on the **Map**, in seconds (2). Select the **Do not use** value if updating is not required.
4. To save changes click the **Apply** button (3).

*Forteza-M two-position sensor* is configured.

## 5 Working with Forteza PID integration module

### 5.1 General information about working with Forteza integration module

The following interface objects are used for working with *Forteza* PID integration module:

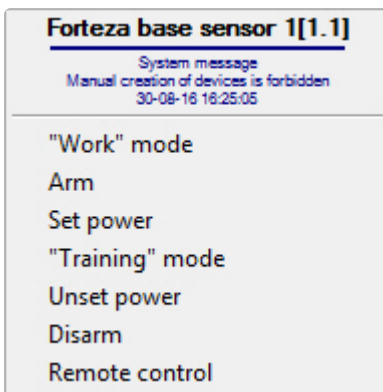
1. **Map.**
2. **Event Viewer.**

Information on how to configure these interface objects is given in details in [Axxon PSIM Software package: Administrator's Guide](#).

Information on how to work with interface objects is given in details in [Axxon PSIM Software package: Operator's Guide](#).

### 5.2 Controlling Forteza base sensor

*Forteza* base sensor is controlled in the **Map** interactive box using the function menu of the **Forteza base sensor** object.



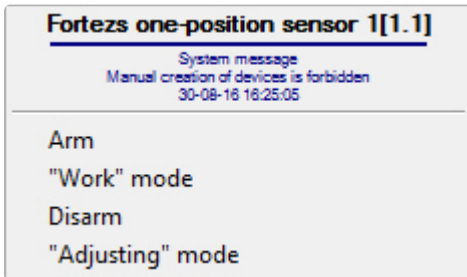
Find description of function menu commands of the **Forteza base sensor** objects in the table.

Function menu command	Executed function
"Work" mode	Switches sensor to the working mode
Arm	Arms sensor
Set power	Sets power to active element
"Training" mode	Switches sensor to the training mode
Unset power	Unsets power from active element
Disarm	Disarms sensor

Remote control	Enables remote control of sensor
----------------	----------------------------------

### 5.3 Controlling Forteza one-position sensor

*Forteza* one-position sensor is controlled in the **Map** interactive box using the function menu of the **Forteza one-position sensor** object.



Find description of function menu commands of the **Forteza one-position sensor** objects in the table.

Function menu command	Executed function
Arm	Arms sensor
"Work" mode	Switches sensor to the working mode
Disarm	Disarms sensor
"Adjusting" mode	Switches sensor to the configuration mode

### 5.4 Controlling Forteza two-position sensor

*Forteza* two-position sensor is controlled in the **Map** interactive box using the function menu of the **Forteza two-position sensor** object.

**Note**

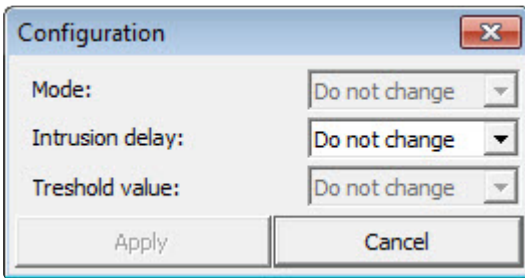
To set up the **Forteza two-position sensor** object, it is recommended to use the **Text** display type on the map.

<b>Forteza two-position sensor 1</b>
Show last events
Switch mode
Handle alarms
Arm
Settings
Disarm
Change threshold

Find description of function menu commands of the **Forteza two-position sensor** object in the table.

<b>Function menu command</b>	<b>Executed function</b>
Switch mode	<p>Sequentially switches the sensor operation modes.</p> <p>The following modes are available for the Forteza sensors:</p> <ul style="list-style-type: none"> <li>• Duty mode — displays the interference level</li> <li>• Adjustment — displays the signal level</li> <li>• Thresholds — displays the current threshold value</li> </ul> <p>The following modes are available for the MIR sensors:</p> <ul style="list-style-type: none"> <li>• Duty mode — displays the interference level</li> <li>• IR adjustment — displays the signal level of the infrared channels</li> <li>• RB adjustment — displays the signal level of the radio ray (radio beam) channels</li> <li>• Thresholds — displays the current threshold value</li> </ul>
Handle alarms	Alarm confirmation by the operator
Arm	Arms the sensor
Settings	Opens the sensor configuration window
Disarm	Disarms the sensor
Change threshold	Sequentially switches the trigger threshold in the range from 0.25V to 1V and the 0.1V interval

Functions available in the **Settings** menu:



**⚠ Attention!**

Adjusting and setting the threshold values for sensors should be performed in accordance with the manufacturer's technical documentation.

**i Note**

After the adjustment is made and the threshold values are set, the sensors should be switched to the duty mode and the **Period of indicator updating** parameter value should be set to **Do not use**. These actions will improve the general responsiveness of the system (see [Configuring Forteza two-position sensor](#)).




**i Note**


For the Format sensors, an alarm is generated only when it occurs simultaneously on the IR and RB channels.

## 5.5 Forteza-Controller states

*Forteza-Controller* cannot be controlled in the **Map** interactive box.

The following *Forteza-Controller* states are possible:

<p>Forteza-Controller 1[1.1]</p> 	Alarm
<p>Forteza-Controller 1[1.1]</p> 	Starting operation alarm
<p>Forteza-Controller 1[1.1]</p> 	Remote control alarm

Forteza-Controller 1[1.1] 	Armed
Forteza-Controller 1[1.1] 	Disarmed
Forteza-Controller 1[1.1] 	No connection

## 5.6 Controlling Forteza-Controller relay



*Forteza-Controller relay* is controlled in the **Map** interactive box using the function menu of the **Forteza-Controller relay** object.

<b>Forteza-Controller relay 1[1.1.1]</b>
Show last events
ON
OFF

Find description of function menu commands of the **Forteza-Controller relay** objects in the table.

Function menu command	Executed function
On	Turns the relay on
Off	Turns the relay off

The following *Forteza-Controller relay* states are possible:

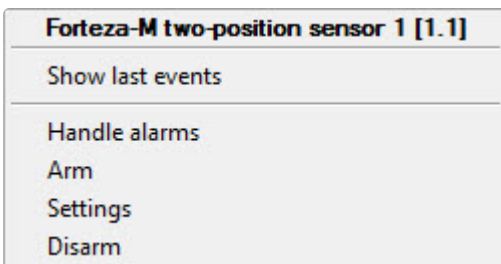
Forteza-Controller relay 1[1.1.1] 	Normal state
Forteza-Controller relay 1[1.1.1] 	No connection

## 5.7 Controlling Forteza-M two-position sensor

*Forteza-M* two-position sensor is controlled in the **Map** interactive box using the function menu of the **Forteza-M two-position sensor** object.

**Note**

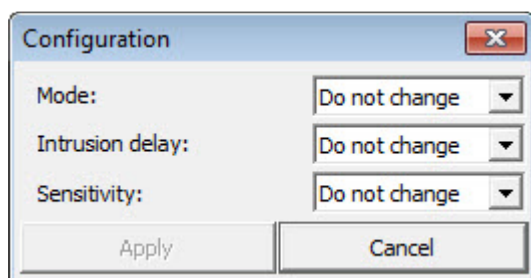
To set up the **Forteza-M two-position sensor** object, it is recommended to use the **Text** display type on the map.



Find description of function menu commands of the **Forteza-M two-position sensor** object in the table.

Function menu command	Executed function
Handle alarms	Alarm confirmation by the operator
Arm	Arms the sensor
Settings	Opens the sensor configuration window
Disarm	Disarms the sensor

Functions available in the **Configuration** menu:



Parameter	Executed function
-----------	-------------------

Mode	<p>The following modes are available for the Forteza sensors:</p> <ul style="list-style-type: none"> <li>• Duty mode — displays the interference level</li> <li>• Adjustment — displays the signal level</li> </ul> <p>The following modes are available for the MIR sensors:</p> <ul style="list-style-type: none"> <li>• Duty mode — displays the interference level</li> <li>• IR adjustment — displays the signal level of the infrared channels</li> <li>• RB adjustment — displays the signal level of the radio ray (radio beam) channels</li> </ul>
Intrusion delay	<ul style="list-style-type: none"> <li>• Low 0,1 - 1 m/s</li> <li>• Low 0,1 - 4 m/s</li> <li>• Low 0,1 - 10 m/s</li> </ul>
Sensitivity	10% to 100%

 **Attention!**

Adjusting for sensors should be performed in accordance with the manufacturer's technical documentation.

 **Note**

After the adjustment is made, the sensors should be switched to the duty mode and the **Period of indicator updating** parameter value should be set to **Do not use**. These actions will improve the general responsiveness of the system (see [Configuring Forteza-M two-position sensor](#)).

 **Note**

For the Format sensors, an alarm is generated only when it occurs simultaneously on the IR and RB channels.