BLAXTAIR®

Setup manual
Réf. : MH/MC/EN

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The information contained in this document may be subject to change without notice.
1 Foreword

Warning

BLAXTAIR® contains an embedded tool to configure the system.

The installer remains responsible for the correct configuration of the system. He should make sure the correct parameters are set and check that the system operates as expected.
1.1 Equipment required for the configuration

- A USB hub, to connect at the rear panel of the processing unit;
- A keyboard, preferably wireless, to connect to the hub;
- A mouse, preferably wireless, to connect to the hub.

1.2 Launching

- When the screen displays the disclaimer text or the scene captured by the cameras, press simultaneously the « CTRL », « ALT » and « F2 » keys. The screen becomes black and displays a white text;

- Key in « admin », then press « Enter » key ; a password is required ;

- Key in « fds », then press « » key, text is displayed to the screen ;

⚠️ It is normal that nothing appears on the screen when writing the password.

- Key in « product_permanent », then press « » key ; a password is required ;

- Key in « fds », then press « » key, text is displayed to the screen ;

⚠️ Warning

- After a version update only:
  - Key in "select_arcure"
  - Resume following configuration
  - Otherwise, skip to the next step

- Key in « product_configure », then press « » key; the configuration tool opens.

The information contained in this document may be subject to change without notice.
1.3 Selection of the configuration model

The configuration models available for an operative usage are:

- system composed of one processing unit and one sensor head: MR90;
- system composed of one processing unit and two sensor heads working alternatively: MR90A;
- system composed of two processing units and two sensor heads working permanently: MR180.

For a system specifically configured by Arcure: Choose the vehicle (Manufacturer/Type/System) specified on the delivery note.
2 Specialisation of the selected model

2.1 Installer language and keyboard

- To change the language of the installer, press the button « en – Installer » and select the expected language;

- To change the configuration of the keyboard, press the button “AZERTY keyboard” and select the used keyboard.

2.2 User language

- To change the language of the user, press the button « fr » and select the expected language
2.3 Configuration of sensor head(s) height and inclination

The height of the sensor head is the distance between the ground and the camera lens.

The inclination of the sensor head is the angle between the horizontal and the line of sight of the head. It is negative when the sensor head is oriented to the ground.

- Select the head you want to setup by clicking it:

- Set the height moving the cursor to its physical value previously measured;
- Set the angle moving the cursor to its physical value previously measured;

For MR90-A configurations, repeat the procedure for the second head.

The two types of icons can differentiate which heads you set.
2.4 Configuration of the vehicle on which Blaxtair® is installed

- Select the mode « Advanced setting » ;
- Fill the field « Manufacturer » field (for instance “Arcure”) ;
- Fill the field « Type » field (for instance “generic car”) ;
- Fill the field « Width » field (width of the vehicle’s template in meters, for instance « 2.50 (m) ») ;
- Fill the field « Length » field (length of the vehicle’s template in meters, for instance « 5.10 (m) ») ;
- Double-click on the schema representing the vehicle, then select the schema corresponding to the vehicle the system is installed on.
Warning

The dimensions of the template should not be disregarded, because a schema representing the vehicle is displayed to the user for certain configurations.

If the dimensions configured in the system are significantly different from the actual ones, it could induce the operator of the vehicle in error.
2.5 Flipped view

When this view is enabled, the image displayed on the screen is flipped to simulate the reflection in a mirror.

It is recommended to enable this view when the cameras capture the scene located in the back of the operator. This way, when the driver sits front of the screen and back to the sensor head, what stands on its left (or right) is displayed on the left to the screen (or right).

In the drawing area, click on the head, then, on the left zone displaying the properties of the head, check/uncheck the “Flipped view” box to enable/disable this view.

⚠️ Warning

The status of the flipped view should be related to the orientation of the sensor head on the vehicle and to the raising of alarms according to the reverse gear signal.
2.6 Location and positioning of the sensor head(s) on the vehicle

In certain configurations, a schema representing the vehicle and the detection zones is displayed to the user.

So that the operator knows the areas around the machine where the presence of an obstacle of significant size or a pedestrian generates an alarm, it is necessary to adjust the location and positioning of the head on the machine.

In “advanced setting”, click on the sensor head in the drawing area.

The head can be moved by holding down the mouse and dragging, or by editing the fields "x" and "y" in the left zone displaying the properties of the head.

The positioning of the head can be changed by moving the cursor of the same zone.

- The point x=0, y=0 corresponds to the front left corner of the vehicle’s template;
- Increasing x coordinate moves the head to the right in the drawing zone;
- Increasing y coordinate moves the head to the bottom in the drawing zone;
- When positioning is 0°, the head is directed to the front of the vehicle;
- When positioning is 90°, the head is directed to the left of the vehicle;
- When positioning is 180°, the head is directed to the rear of the vehicle;
- When positioning is 270°, the head is directed to the right of the vehicle.
Warning

The status of the flipped view should be related to the orientation of the sensor head on the vehicle and to the raising of alarms according to the reverse gear signal.

2.7 Alarm raising

The detections are notified to the operator by alarms raised when reverse gear is set and/or gear is neutral or forward.

- To enable/disable the raising of alarms on neutral and forward gear, check/uncheck the box « In forward/neutral gear » ;
- To enable/disable the raising of alarms on reverse gear, check/uncheck the box « In reverse gear ».

In MR90 configurations, when the sensor head captures the scene located in the back of the operator, it is recommended to raise the alarms on reverse gear only.

On vehicles where no reverse gear signal is available (for example, some shovels), it is recommended to check both boxes « In forward/neutral gear » and « In reverse gear ».

Warning

On a MR90-A system, the two heads can not function simultaneously. Check the "backwards" on one uncheck the other, and vice versa. Check these parameters before validating the configuration.
2.8 Detection zones (Nature, dimensions)

2.8.1 Description of the detection zones

Two zones have to be configured:

- A « near obstacle » zone, close to the sensor head, raising fast periodic visual and/or sound alarms ;
- A « far obstacle » zone, raising slow periodic visual and/or sound alarms.

The detection zones are described by the x and y coordinates of their four vertices. The current version of the tool does not allow to add or remove a vertex to the detection zone, this option may be made by Arcure with a special configuration (paying)

2.8.2 Modification of the detection zones

By clicking on the detection zones in the drawing area, the coordinates of the points defining the zone are displayed at the left of the screen.

It is possible to modify the detection zones by dragging the points and/or segments with the mouse in the drawing area, or by changing their coordinates in the text boxes displayed at the left of the screen.

![Detection zones interface](image)
2.8.3 Physical characteristics of the detection zones

⚠️ Warning
If, after having been modified, the detection zones do not comply their physical characteristics, the tool may detect and notify the installer by pointing out possible inconsistencies.

In this case, refer to section 4.1 to resolve these inconsistencies.

The tool provides configuration assistance. However, it is not designed to detect all possible inconsistencies. The operator that defines the configuration is responsible for the validity of it and must check at the end of the adjustment phase if it is operational.

For obstacle zone:
- Minimum range : 0.30 m with “near detection” option, 0.70 m without.
- Maximum range : 4.00 m ;
- Maximum width : 2.00 m on each side of the optical center, which corresponds to a maximum width of 4.00 m ;
- Opening angle: 105° (i.e. at 1.50 m in the axis from the sensor head, the detection is limited to about 2.00 m on each side of the head).

For pedestrian zone:
- Minimum range : 1.50 m
- Maximum range : 6 m without “near detection” option, 5 m with.
- Maximum width : 2.25 m on each side of the head, which corresponds to a maximum width of 4.50 m.
- Opening angle : 90° (i.e. at 1.50 m in the axis from the head, the detection is limited to about 1.5 m on each side of the head)

Outside these limits, the detection may work, but possibly with degraded performance.
3 Options

Options are available. This will be enabled if the client has subscribed to the command given by a code on the delivery note system.

3.1 Sharp slopes

The "steep slopes" for example corresponds to a career in use. It is possible to prevent the triggering of alarms due to detection of the ground at very steep slopes rupture (down a ramp to 45 °, for example) or large sand piles, etc.

The activation code for this option is provided on the delivery note of system if appropriate.

3.2 Near detection

The "near detection " option allows the system to detect obstacles in the path from 0.30cm instead of 0.70 cm without enabling this option.

Enabling this option slightly degrades pedestrian detection performance between 5m and 6m deep.

The password to activate it is: 0852
3.3 Cluttered environment

The "crowded environment" option corresponds to the use of the vehicle in an environment with many obstacles, such as warehouse.

It limits the detection of object size superior to a given template.

The activation code for this option is provided on the delivery note of system if appropriate.
4 Resolution of possible inconsistencies

4.1 Zone

If the tool notifies this possible inconsistency, check that:

- All « x » coordinates of the detection zones are greater than -6.00 m and smaller than 6.00 m;
- All « y » coordinates of the detection zones are positive and smaller than 5.50 m;
- The option « Near detection » is enabled;
5 Verification of the configuration

To quit the configuration tool, press the « Exit » button.

Changes are automatically saved.

When the screen displays white text on black background, key in « exit », then press « Enter » key.

The system restarts automatically with the new configuration.

5.1 MR90-A Configuration

- Check that the scene displayed to the screen corresponds to the front sensor head when gear is not reverse ;
- Check that the scene displayed to the screen corresponds to the rear sensor head when gear is reverse ;

5.2 Verification of the user language

- Check that the warning text displayed just before the scene captured by the sensor head is in the user language
5.3 **Verification of the flipped view**

- Check that the enabling or disabling of the flipped view complies the customer requirements when the screen displays the scene captured by the sensor head.

5.4 **Verification of the sensor head(s) height and angle**

- When the screen displays the scene captured by the sensor head, press the 'i' key of the keyboard;
- The values of height and angle indicated on the blue and yellow lines should be similar.

5.5 **Verification of the schema of the vehicle and of the detection zones**

If this schema is displayed in the right top corner, check:

- The schema of the vehicle (nature, proportions);
- The location and positioning of the sensor head on the vehicle;
- The detection zones (shape, proportions);

5.6 **Verification of alarm raising**

Check that the alarm raising according to the gear status complies the customer requirements.

Check that an obstacle in the near detection zone raises the expected alarm: «!» fast periodic.

Check that an obstacle in the far detection zone raises the expected alarm: «!» slow periodic.

6 **Troubleshooting**

6.1 **Impossible to display the catalogue of vehicle’s schemas**

- Exit the tool;
- Reopen the tool keying in «product_configure»;
- Follow the steps described in section 0.
6.2 Arcure’s customer support

For any need of support or any technical question concerning BLAXTAIR®, its installation, its configuration or maintenance, do not hesitate to contact us:

hotline@arcure.net

(+33) 175 43 90 58

For any support request, Arcure’s technical team will ask you the product and serial numbers indicated on the processing unit.