

CE EN 50131-1
EN 50131-2-6
EN 50131-5-3
EN 50130-4
EN 50130-5

AIR2



Air2-MC400

Micro-magnetic contact

Installation and programming manual

inim[®]

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1. Description of Air2-MC400

The Air2-MC400 magnetic contact is supplied with a magnet, which can be fixed (by means of two screws or adhesive tape, supplied) in two positions set at 90° one from the other.

The magnet is equipped with three different bases for 3 different installation heights (21, 26 and 32.5 mm), depending on the installation requirements.

The device is protected against dislodgement and open-cover tamper.

Models

- Air2-MC400/B, micro-magnetic contact, in white
- Air2-MC400/M, micro-magnetic contact, in brown

Signalling

Air2-MC400 manages to produce two signals recognizable by the control panel:

- **Alarm** signalling; this signal is sent in the event of a decrease in the magnetic field (magnet distancing or removal) or in the event of dislodgement of the magnet
- **Tamper** signalling; this signal is due to the opening of the box of the magnetic contact, but also to the variation of the magnetic field caused by the interference of an external agent (for example the approach of an additional magnet).

Operation

Air2-MC400 has three operating modes for detecting magnet tamper, which can be selected via an appropriate installation and *configuration procedure of the interference magnet sensitivity*.

- **Level 1**, low sensitivity (factory setting)
- **Level 2**, medium sensitivity
- **Level 3**, high sensitivity (in compliance with the requirements of European standard EN50131-2-6 concerning the magnetic interference test).

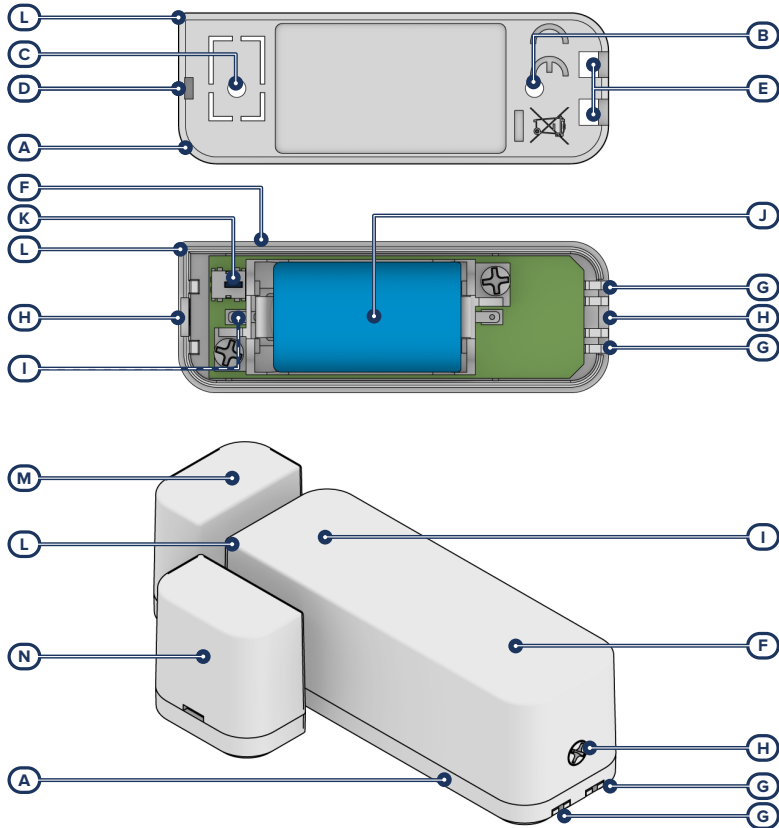
Warning

It is recommended to set level “3” only in cases where high security is required.

Package contents

- Air2-MC400 magnetic contact
- magnet
- 2 replacement magnet bases
- 5 wall plugs for mounting the backplate and tamper bracket
- double-sided adhesive tape
- battery (already in place)
- installation guide

1.1 Description of parts



| | |
|-----|--------------------------|
| [A] | Box base |
| [B] | Mounting screw hole |
| [C] | Tamper-screw location |
| [D] | Closure tab |
| [E] | Retainer locations |
| [F] | Box cover |
| [G] | Closure hooks |
| [H] | Retaining screw location |

| | |
|-----|------------------------|
| [I] | Red LED |
| [J] | Battery |
| [K] | ENROLL button |
| [L] | Magnet alignment point |
| [M] | Magnet - short side |
| [N] | Magnet - long side |

Tamper protection/ENROLL button

The microswitch functions both as a tamper signal and as an “Enroll” button for enrolling the device.

When the box is opened a tamper signal will be sent and the button will change its function to “Enroll” mode.

During the enrolling phase you can then press the button or alternatively lightly shake the Air2-MC400 device.

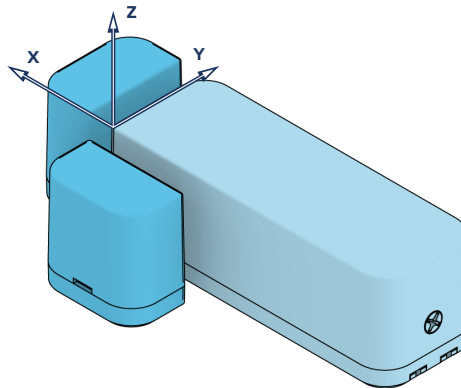
5 seconds after closing the box the button will return to the anti-tamper function.



1.2 Magnet detection

The magnetic sensor the device is equipped with detects the magnetic field in the surrounding space and its variations.

The following tables show the operating distances in millimetres of the magnet based on the level of sensitivity to the interference magnet, the side used and the axes shown in the figures (values obtained starting from a nominal distance of 1 mm, except for the x-axis for the short side and the y-axis for the long side):



Short side

| Axis | Level 1 | | Level 2 or 3 | |
|------|-----------|------|--------------|------|
| | Withdrawn | Near | Withdrawn | Near |
| + x | 25 | 18 | 20 | 15 |
| + y | 23 | 17 | 11 | 9 |
| - y | 33 | 27 | 17 | 15 |
| + z | 25 | 23 | 23 | 21 |
| - z | 11 | 8 | 9 | 7 |

Long side

| Axis | Level 1 | | Level 2 or 3 | |
|------|-----------|------|--------------|------|
| | Withdrawn | Near | Withdrawn | Near |
| + x | 34 | 28 | 19 | 17 |
| + y | 34 | 28 | 6 | 4 |
| - y | 25 | 18 | 20 | 15 |
| + z | 25 | 23 | 21 | 19 |
| - z | 11 | 8 | 7 | 5 |

Note

All the distances indicated above have a tolerance of +/- 2 mm.

1.3 Technical specifications of Air2-MC400

| | |
|---|---|
| Battery | |
| type | Lithium CR2 3V |
| estimated life | 4 years |
| "Low battery" fault voltage | Less than 2.4V |
| Current draw | |
| during standby | 12µA |
| maximum | 41mA |
| Operating environmental conditions | |
| temperature | from -10 to +40°C |
| relative humidity | ≤ 93% without condensation |
| Security rating | 2 |
| Environmental class | II |
| Dimensions (W x H x D) | 21 x 59.7 x 21 mm |
| Weight | 32 g |
| Magnet dimensions | |
| W x D | 21 x 12 mm |
| | <ul style="list-style-type: none"> • 21 mm • 26mm • 32.5mm |
| Height, depending on the base used | |
| Colours | White, Brown |



(EN IEC 62368-1)

| | | |
|---------------|---------|----------|
| Terminal type | BATTERY | ES1, PS1 |
|---------------|---------|----------|

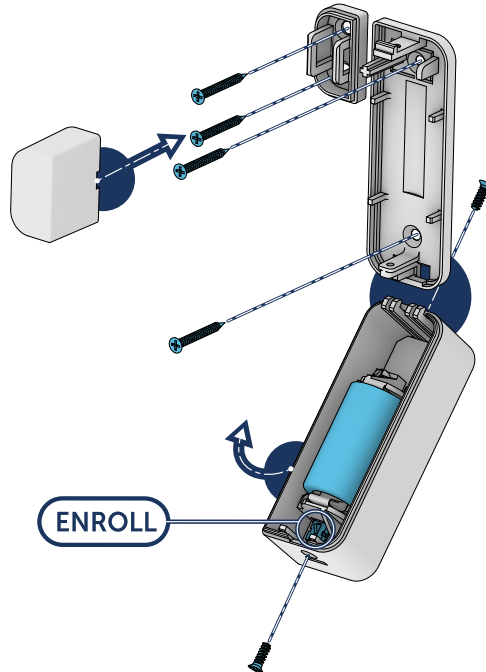
Technical specifications of Air2 system

| Operating frequency | |
|---------------------|-------------------------|
| range | 868.0 - 868.6 MHz |
| selectable channels | 868.1, 868.3, 868.5 MHz |
| RF output power | 25mW e.r.p. |
| Communication type | Two-way |
| Modulation | GFSK |
| Device monitoring | from 12 to 250 minutes |

Note

In order to comply with the EN 50131-1 standards the alarm system supervision time must be below 120 minutes.

2. Installation of Air2-MC400

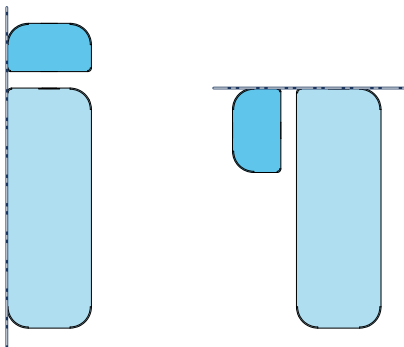


1. Choose a suitable mounting placement.

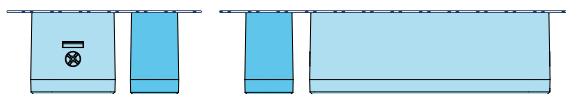
Attention!

Ferromagnetic materials which are located in the vicinity of the mounting position can influence the magnetic field and can result in the reduced operating capacity of the device.

2. Remove the securing screws and open the cover by slightly bending the closure tab.
3. Hold the base to the chosen mounting placement and mark the points for the base attachment and tamper protection.
4. Using the screws, secure the base and the tamper protection in position.
5. If you wish to fit the magnet by means of the screws (included), remove the magnet base.
6. In accordance with the installation requirements, use the base of the magnet with the necessary height, from the three available.
7. Position the magnet base on the desired side (long or short) of the magnetic contact. Align the magnet with the alignment point corresponding to the unrounded area of the base.



If a tamper detection with level “3” is required, as indicated in the European standard EN 50131-2-6 regarding the interference magnet test, it is necessary to align the magnet to the contact also along the axis perpendicular to the base:



8. Using the screws or the adhesive tape, attach the magnet.
9. Remove the battery tab.
10. Enroll the device.
11. Only in the case where tamper detection with level “2” or “3” is required, carry out the *interference magnet sensitivity setting* procedure.
12. Mount the front cover on the base of the contact and insert the securing screws into the appropriate holes.

Wireless signal reception level

Immediately after enrolling and for the next 3 minutes or so, each time an alarm is generated, the device LED provides information on the level of the wireless signal:

- 2 flashes = low RF signal level
- 3 flashes = medium RF signal level
- 4 flashes = high RF signal level

Note

However, such indications are shown on the LED only if for programming the “Use sensor LED” option has been activated.

2.1 Configuring interference magnet sensitivity

The following procedure can be carried out in order to set the interference magnet sensitivity level after installation.

1. Open the Air2-MC400 box. If previously enrolled, the device will signal opening to the control panel.
2. If necessary, carry out the device enrolling process by pressing the **ENROLL** button.
Or alternatively lightly shake the Air2-MC400 device.
3. Close the box with the base placed in its final position.
4. Position the magnet in the required stand-by (at rest) position, in other words the position in which the device must not generate any alarm or tamper signal.
The position can be considered suitable for detection if it has a distance from the magnetic contact that is less than the minimum operating distance (in accordance with the table "*Operating distances of the magnet*").
5. The device LED will blink rapidly for 20 seconds, indicating access to the interference magnet sensitivity setting phase.

Carry out one of the following actions to set the desired sensitivity level at which a visual signal will occur.

| Sensitivity level | Actions to be carried out | Visual signalling |
|-------------------|---|----------------------|
| 1 | Double or quadruple touch, without magnet | None |
| 2 | Double-tap | LED On for 1 second |
| 3 | Quadruple touch | LED On for 3 seconds |

Note

In the operating mode at level "3" the magnetic contact will generate a tamper signal if the supplied magnet is brought closer to the device by more than 2 mm from the position configured during the procedure.

If no action is revealed within 20 seconds, the device operating mode is not changed and the LED provides a visual signal on timeout, as shown in the table, then it will be possible to check the set sensitivity level.

Warning

If the device continues to generate the alarm or tamper signal even when in the stand-by (at rest) position in level "2" or "3" sensitivity mode, it is advisable to repeat the magnet-position configuration procedure.

It is recommended to set level "3" only in cases where high security is required, as indicated in the European standard EN 50131-2-6 regarding the interference magnet test.

In this case, it is necessary to pay maximum attention to the positioning of the magnet during the sensitivity setting phase. This is to prevent that during normal operation the magnet may be at a distance from the magnetic contact such as to cause the detection of a magnetic field greater than that measured in the configuration phase.

2.2 Enrolling a wireless device

The enrolling process allows you to associate an INIM wireless device with the Air2-BS200 transceiver that connects to the anti-intrusion control panel.

This procedure varies depending on the control panel in use and the programming software or application:

1. Access the control-panel programming section.
2. Select the device to be enrolled in accordance with its type:
 - an expansion board for a transceiver
 - an input terminal, for a detector (motion detector, magnetic contact, etc.)
 - an output terminal, for an output device connected to a terminal of the Air2-MC300 magnetic contact
 - a keypad
 - a sounder/flasher
 - a key, for a remote control device, selecting as the associated reader the one simulated by the transceiver
 - a home-automation module
 - a temperature sensor
3. Set the device as 'Wireless'.
4. Start the learning phase from the control panel.
5. Press the **ENROLL** button on the wireless device.
Or alternatively lightly shake the Air2-MC400 device.

Via Prime/STUDIO software application

Once the solution for the system to be designed has been opened, click on the **System Layout** button on the menu on the left. Then in the section on the right click on the **Add device on BUS** button.



A window opens where you can select the devices to be configured and add them to the configuration.

In the section on the left you can increase the number using the button corresponding to the selected device type.



To remove a device from the structure, work through the Add device procedure, but instead deselect the device you want to remove

Alternatively, you can access the programming section by clicking on the relevant button on the menu on the left, and from the list that appears click on the **Delete** button that corresponds to the line of the device to be removed.

Via keypad

Enrolling of wireless devices is possible by enabling the menu options in the installer menu section:

Type-in Code (Installer), PROGRAMMING Expansions, Enable/Disable

In this section it is possible to add/remove readers from the configuration, by means of keys  and .

Following this you need to declare the expansion as "Wireless" by declaring one of its terminals as "Wireless".

2.2.1 Enrolling wireless terminals

1. Go to the expansion board field and then to the terminal concerned.
2. Configure the terminal as "Wireless":

Via keypad

Type in Code (Installer), PROGRAMMING Terminals, select the terminal concerned

Press the number button “6”; the word “Wireless” will appear on the last line of the display (pressing the button again will disable the wireless attribute on the terminal).

Via software

Right click on the expansion that was previously added to the configuration and select “Wireless” to configure it as such. The “Wireless” symbol will appear on the expansion image.



Note

If a terminal on the expansion board is configured as “wireless”, all the remaining terminals must be configured as “wireless” terminals.

3. Enrolling the terminal:

Via keypad

Type in Code (Installer), PROGRAMMING Terminals, select the terminal concerned, Wireless, Enroll device

Enroll the terminal by selecting the type.

Via software

Double-clicking on the configured terminal will open a window where you can program the zone. The lower part of the window shows the “Wireless section”, right-click and select the “Wireless” option. Select the type of device, in the “Type” field, then start the guided enrolling process by clicking-on the **Enroll** button.

4. Press the **ENROLL** button on the Air2 device.
Or alternatively lightly shake the Air2-MC400 device.

2.3 Battery replacement

When replacing the power supply batteries of the equipment, the installer must use only non-rechargeable lithium batteries compliant with IEC 60086-4 standard provided by Inim Electronics or similar batteries with integrated thermal protection.



In the case of battery replacement, it is advisable to press the **ENROLL** in order to ensure that the device is synchronized with the wireless transceiver.

Alternatively, simply shake the Air2-MC400 device.

3. Programming wireless terminal



The programming of a wireless terminal can only be done through the control panel programming software or through a keypad.

On accessing the software, it is necessary to open a solution, configuration of the real system to be designed. Successively a terminal previously configured or to be configured as 'wireless' must be selected.

After which it will be possible to access the device programming in order to select or change the device type and its parameters.

3.1 Wireless terminal parameters

Parameters and sensitivity

| Parameter | Software section | Installer menu section |
|--|---|--|
| Use detector LED The red LED on the device provides visual signalling of alarm or tamper conditions on the device itself. |  Wireless expansion, Selected terminal, Wireless | Terminals, "Terminal", Options, Use sensor LED |
| Bypass tamper This option disables open/dislodgement tamper signalling. | | DisableTamperWLS WLS |
| Disable wireless monitoring Enabling this option (disabled by default), disables monitoring on the wireless detector. In the event of the loss of the specific detector, no event will be generated and no fault signal will be signalled on the keypad. | | No superv. WLS |
| Disable detector on partition disarming In order to increase battery life, the infrared sensor will deactivate when the partitions it belongs to are disarmed and will only activate when the partitions it belongs to arm. When the detector is deactivated it will not generate alarms. When the partitions arm, there may be a delay of up to 3 minutes before the detector receives the activation command. For future use | | TampReed/FollPir |
| Alarm pulses This is the number of pulses (each lasting as long as the programmed 'Alarm pulse duration') necessary to generate a zone alarm event. If this value is more than 1, you must also program the 'Multi-pulse time' parameter. |  Zones, selected zone, Device parameters 'generic' | Zones, generic zone |
| Multi-pulse time This parameter applies only when the 'Alarm pulse num.' is higher than 1. This is the window during which a number of alarm pulses must be detected (each lasting as long as the programmed 'Alarm pulse duration') equal to the value programmed for 'Alarm pulses' in order for the system to generate an alarm. This time window can be expressed in seconds or minutes. | | |
| Alarm pulse duration This is the length of time (after detection of alarm conditions) the zone will allow before generating an alarm. Expressed in multiples of 15 milliseconds or minutes. | | |

3.2 Real-time

For each configured device the software provides a direct software-to-device connection which allows visualization of the real-time values of the following features:

| | |
|-------------------------------|---|
| Signal reception level | This series of notches represents the reception level of the wireless signal of the device as received by the Air2-BS200 transceiver. |
| Battery charge level | Percentage of the device battery charge. |
| RF analysis | Function to monitor the variation of the signal transmitted by the device and the background noise detected through time. |

Such data can be reached through the 'Real time' section relating to the programming of each wireless device or through the 'Monitoring' section which provides an overview of all the devices connected to the control panel.

4. General information

4.1 About this manual

Manual code: DCMIINE0A2MC4008E

Revision: 100

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4.2 Manufacturer's details

Manufacturer: Inim Electronics S.r.l.

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The persons authorized by the manufacturer to repair or replace the parts of this system have authorization to work only on devices marketed under the brand Inim Electronics.

4.3 Simplified EU Declaration of Conformity

Hereby, Inim Electronics S.r.l. declares that the radio equipment type Air2-MC400 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.inim.it.

4.4 Warranty

Inim Electronics S.r.l.. (Seller, Our, Us) warrants the original purchaser that this product shall be free from defects in materials and workmanship under normal use for a period of 24 months.

As Inim Electronics does not install this product directly, and due to the possibility that it may be used with other equipment not approved by Us, Inim Electronics does not warrant against loss of quality, degradation of performance of this product or actual damage that results from the use of products, parts or other replaceable items (such as consumables) that are neither made nor recommended by Inim Electronics. Seller obligation and liability under this warranty is expressly limited to repairing or replacing, at Seller's option, any product not meeting the specifications. In no event shall Inim Electronics be liable to the purchaser or any other person for any loss or damage whether direct or indirect or consequential or incidental, including without limitation, any damages for lost profits, stolen goods, or claims by any other party caused by defective products or otherwise arising from the incorrect or otherwise improper installation or use of this product.

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover damage arising from improper maintenance or negligence, damage caused by fire, flood, wind or lightning, vandalism, fair wear and tear.

Inim Electronics S.r.l. shall, at its option, repair or replace any defective products. Improper use, that is, use for purposes other than those mentioned in this manual will void the warranty. Contact Our authorized dealer, or visit our website for further information regarding this warranty.

4.5 Limited warranty

Inim Electronics S.r.l. shall not be liable to the purchaser or any other person for damage arising from improper storage, handling or use of this product.

Installation of this Product must be carried out by qualified persons appointed by Inim Electronics. Installation of this Product must be carried out in accordance with Our instructions in the product manual.

4.6 Documents for the users

Declarations of Performance, Declarations of Conformity and Certificates concerning to Inim Electronics S.r.l. products may be downloaded free of charge from the web address www.inim.it, getting access to Extended Access and then selecting "Certifications" or requested to the e-mail address info@inim.it or requested by ordinary mail to the address shown in this document.

Manuals may be downloaded free of charge from the web address www.inim.it, getting access to the reserved area, after the login, and then to the section of each product.

4.7 Disposal of the product



Informative notice regarding the disposal of electrical and electronic equipment (applicable in countries with differentiated waste collection systems)

The crossed-out bin symbol on the equipment or on its packaging indicates that the product must be disposed of correctly at the end of its working life and should never be disposed of together with general household waste. The user, therefore, must take the equipment that has reached the end of its working life to the appropriate civic amenities site designated to the differentiated collection of electrical and electronic waste. As an alternative to the autonomous-management of electrical and electronic waste, you can hand over the equipment you wish to dispose of to a dealer when purchasing new equipment of the same type. You are also entitled to convey for disposal small electronic-waste products with dimensions of less than 25cm to the premises of electronic retail outlets with sales areas of at least 400m², free of charge and without any obligation to buy. Appropriate differentiated waste collection for the subsequent recycling of the discarded equipment, its treatment and its environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favours the re-use and/or recycling of the materials it is made of.



Information about disposal of batteries and accumulators (applicable in Countries with separate collection systems)

This marking on batteries and/or their manual and/or their packaging, indicates that batteries of this products, at the end of their working life, should not be disposed of as unsorted municipal waste, but must be object of a separate collection. Where marked, the chemical symbols Hg, Cd o Pb indicate that the battery contains mercury, cadmium or lead above the reference levels of the directive 2006/66/EC. If batteries are not properly disposed of, these substances, together with other ones contained, can cause harm to human health and to the environment. To protect human health and the environment, to facilitate treatment and recycling of materials, separate batteries from other kind of waste and use the collection scheme stated in your area, in accordance to current laws. Before disposing of the above, it's appropriate to remove them from their holders avoiding to damage them or causing short circuits.



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