AiR2

Air2
Wireless devices
Installation and programming manual

GameOver

Blank

Chapter 1

GENERAL INFORMATION

About this manual   1-1

DCMIIN1CA2BS201	**MANUAL CODE**
1.50	**VERSION**

COPYRIGHT

The information contained in this document is the sole property of INIM Electronics s.r.l. Copying, reprinting or modification of this document, in part or as a whole, is not permitted without prior authorization in writing from INIM Electronics s.r.l.

Manufacturer's details   1-2

Manufacturer:	INIM Electronics s.r.l.
Production plant:	Centobuchi, via Dei Lavoratori 10
	63076 Monteprandone (AP), Italy
Tel:	+39 0735 705007
Fax:	+39 0735 704912
e-mail:	info@inim.biz
Web:	www.inim.biz

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

System Description   1-3

The advanced Air2 two-way wireless intrusion protection system (915MHz frequency) integrates directly with all models in INIM intrusion control panel range.

Table 1: Technical specifications of Air2 system

Operating frequency	range	915.0 - 915.6 MHz
	selectable channels	915.1, 915.3, 915.5 MHz
RF output power		25mW e.r.p.
Communication type		Two-way
Modulation		GFSK
Device supervision		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.

Air2 system devices:

- **Air2–BS200/50** transceiver module, 50 terminals
- **Air2–BS200/30** transceiver module, 30 terminals
- **Air2–BS200/10** transceiver module, 10 terminals
- **Air2–MC200** magnetic contact with shock and tilt sensor in white or brown
- **Air2–MC300** magnetic contact with two I/O terminals, in white or brown
- **Air2–KF100** 4 button remote-control key
- **Air2–Ergo** 4 button remote-control key
- **Air2–Pebble** 4 button remote-control key
- **Air2–FD100** smoke detector

- **Air2-Aria**   keypad with graphic display
- **Air2-Hedera**   outdoor sounder, in white or chrome effect
- **Air2-DT200T**   dual technology curtain detector, in white or brown
- **Air2-XIR200W**   PIR detector, 12m
- **Air2-XDT200W**   dual technology curtain detector
- **Air2-UT100**   universal transceiver
- **Air2-ODI100W**   outdoor wireless dual-infrared detector
- **Air2-OTT100W**   outdoor wireless triple-technology detector

Each Inim control panel supports more than one Air2-BS200 module, connected via I-BUS, in accordance with the contents of the table:

Table 2: Number of Air2-BS200 managed by the control panel

SmartLiving control panel				Prime control panel		
505	**515**	**1050**	**10100**	**Prime060S**	**Prime120L**	**Prime240L**
10	10	20	30	20	30	30

SmartLiving control panels with a motherboard firmware version lower than or equal to 6.00 are unable to manage Air2-Aria and Air2-Hedera devices.   **Note**

For optimal performance of the wireless system the Air2-BS200 transceiver module must be located at the core of the wireless network and area of use of remote-control keys, in a placement which allows easy connection of the I-BUS cable to the control panel.

All wireless protection devices should be located high up in order to increase their detection capabilities and prevent inadvertent masking caused by large objects or building occupants.

It is possible to view on the keypads or via the programming and supervision software, the strength of the Air2-BS200 wireless signal on each wireless device, this data can be used to optimize the installation process.

A level 3 signal strength it is recommended for a good installation.   **Note**

As an integral part of the system, the Air2 provides 3 inter-module transmission channels. This feature allows you to select the channel in such way as to avoid over-the-air interference between two close-proximity wireless systems (for example, in two adjoining apartments).

For secure deployment and operations of the Air2 wireless intrusion protection system, it is necessary to refer to the Installation and programming guide of the hardwired intrusion control panel in use.

Notes from the Manufacturer   1-4

The information relating to the power-supply batteries required by Air2 devices is shown in the Technical Specification table that follows.

The manufacturer cannot guarantee the declared battery life.

Do not use batteries other than those indicated by the manufacturer as they may explode.   **ATTENTION!**

Used batteries must be disposed of in accordance with the information provided in the leaflet inside the package.

For the technical description and installation instructions of any Air2 devices not described in this manual, refer to the respective manuals included in the packaging of the various devices.

Manuals may be downloaded free of charge from the web address www.inim.biz, getting access to Extended Access and then selecting "Manuals".

For the Statement of Compliance please refer to the information provided in the leaflet inside the package.

Chapter 2

DESCRIPTION OF PRODUCTS

Air2-BS200 Transceiver 2-1

The Air2-BS200 wireless module allows the integration and management of wireless detectors, keypads, sounders in the hardwired environments of all models of INIM intrusion control panels.

The module simulates:

- a reader, at a programmed address (ADD), which allows you to configure the remote control keys
- up to 10 expansion boards, at addresses ADD, ADD+1, ... ADD+9, capable of managing the terminals.

Additionally, each Air2-BS200 allows the Inim control panel to manage up to 4 Aria wireless keypads and 4 Hedera wireless sounders.

EN 50131-1
EN 50131-3
EN 50131-5-3
EN 50130-4
EN 50130-5

CEB T031

Table 3: Technical specifications of the Air2-BS200

Models		BS200/50	BS200/30	BS200/10
Power Supply Voltage		10.5 - 16V⎓		
Maximum current draw		30 - 50 mA		
Bus type		I-BUS / BUS RS485		
Antenna	connector	SMA female		
	impedance	50 Ohm		
Security grade		2		
Environmental class		II		
ACE type (Ancillary Control Equipment)		A		
Operating environmental conditions	temperature	from -10 to +40°C		
	relative humidity	≤93% without condensation		
Dimensions (W x H x D)		80 x 170 x 25 mm		
Weight		135 g		
Terminals		50	30	10
Remote control keys		100	50	30
Aria keypad		4		
Hedera Sounder		4		

Table 4: Description of the Air2-BS200 parts
(*Figure 1 - Air2-BS200, page 23*)

A	Bus connection terminals (I-BUS and BUS RS485)	**H**	LED DL1 - red	**M**	Antenna connector
B	Connectors for the selection of the BUS type	**I**	LED DL2 - blue	**N**	Mounting screw location
C	Connectors for the EOL position (BUS RS485)	**J**	LED DL3 - green	**O**	Tamper screw hole
D	Tamper microswitch: Open cover	**K**	LED DL4 - yellow	**P**	Cable entry
E	Tamper microswitch: Dislodgement	**L**	PRG LED - red	**Q**	Enclosure screw hole
F	Button P1				
G	Button P2				

Table 5: LED Signals

LED DL1 red	LED DL2 blue	LED DL3 green	LED DL4 yellow	PRG LED red	Signal
Off	Discontinuous flashing	Off	Off	Off	Wireless data reception
Off	Off	Discontinuous flashing	Off	Off	Programming phase in progress (from 1 to 5, for SmartLiving only)
Off	Off	Off	solid/ blinking	Off	Data of the programming phase in progress (for SmartLiving only)
Off	Off	Continuous flashing	Off	Off	Enrollment of wireless device in progress (requested at the control panel)
Off	Off	Continuous flashing	Continuous flashing	Off	Erroneous programming (for example, two devices on the same terminal)
1 flash	1 flash	1 flash	1 flash	Off	Reset factory default settings
solid/off/blinking				solid	Address Programming (phase 6)

Air2-MC200 magnetic contact

The Air2-MC200 is supplied with a magnet which is to be secured (by means of two screws) to the side of the contact, in the position indicated by the two notches.

The Air2-MC200 integrates shock and tilt sensors that allows its use without the need of the magnet.

The Air2-MC200 is equipped with open and dislodgement tamper protection.

The device uses separate channels for the different types of signalling,, thus allowing precise identification of the alarm source.

The shock and tilt sensors are not subject to certification of this product.

2-2

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

CEB T031

Note

Table 6: Air2-MC200 technical specifications

Battery	type	Lithium CR2 3V
	estimated life	4 years
"Low battery" fault voltage		Less than 2.4V
Current draw	during standby	10μA
	maximum	30mA
Operating environmental conditions	temperature	from -10 to +40°C
	relative humidity	≤93% without condensation
Dimensions (W x H x D)		35 x 58 x 23mm
Weight		30g
Magnet dimensions		13 x 40 x 14mm
Colours		White, Brown
Security grade		2
Environmental class		II

Table 7: Description of Air2-MC200 parts
(*Figure 3 - Air2-MC200, page 23*)

A	Battery	E	Mounting screw hole
B	Signalling LED - red (on rear)	F	Tamper screw hole
C	Microswitch: open/dislodgement/ENROLL	G	Securing screws
D	Reed contact	H	Magnet position notches

The following table indicates the distance in millimeters of the operating capacity of the magnet depending on the side in use and the axes illustrated in the figure (values starting from a nominal distance of 10mm, except for axis y-):

MAGNET DETECTION RANGE

Table 8: Distance between magnet and contact (mm)

Axis	Contact long side	
	Withdrawn	Near
x +/-	18	14
y -	18	14
z +/-	22	18

Signalling of shock waves is achieved through a tri-axial vibration detector. The vibration sensibility can be set either from a keypad or via the SmartLeague software application. **SHOCK DETECTION**

Signalling of tilting (angle change) is achieved through tri-axial tilt sensing. The tilt-variation value (angle) can be set in relation to the standby position, which is saved to the memory during the reset-after -alarm phase. **TILT DETECTION**

If both shock and tilt sensing are activated, alarm signalling will occur as soon as one of the two conditions exceeds it respective alarm threshold.

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. **ATTENTION!**

Air2-MC300 magnetic contact **2-3**

The Air2-MC300 magnetic contact has two screw-in positions for placement optimization of the device magnet, 90° one from the other.

The Air2-MC300 also provides two terminals which can be configured individually as input or open-collector output. Configuring the terminals as inputs allows management of standard zone balancing (NO, NC, single balancing, double balancing) and also direct interfacing with rollerblind and inertial sensors.

Alarms deriving from magnetic contacts and distinctly from the two terminals are signalled separately on the control panel.

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

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

CEB T031

Table 9: Air2-MC300 technical specifications

Battery	type	Alkaline LR6 AA 1.5V
	estimated life	4 years
"Low battery" fault voltage		Less than 1.15V
Current draw	during standby	30µA
	maximum	45mA
Open-collector output		Max 50mA
Operating environmental conditions	temperature	from -10 to +40°C
	relative humidity	≤93% without condensation
Dimensions (W x H x D)		26 x 108 x 26.5mm
Weight		50g
Magnet dimensions		26 x 14.3 x 26.5mm
Colours		White, Brown
Security grade		2
Environmental class		II

Table 10: Description of Air2-MC300 parts
(*Figure 2 - Air2-MC300, page 23*)

A	Battery	H	Reed contact: short side
B	Antenna	I	Reed contact: long side
C	Signalling LED - red ENROLL button	J	Mounting screw hole
D	Tamper protection	K	Tamper screw hole
E	GND terminal	L	Enclosure screw hole
F	Terminal T1	M	Cable entry
G	Terminal T2	N	Magnet - short side
		O	Magnet - long side

The following table indicates the distance in millimeters of the operating capacity of the magnet depending on the side in use and the axes illustrated in the figure (values starting from a nominal distance of 0mm, except for axis y-):

Table 11: Distance between magnet and contact (mm)

Axis	Contact long side		Contact short side	
	Near	Withdrawn	Near	Withdrawn
x +/-	7	10	7	10
y -	17	19	18	20
z +/-	29	32	33	35

In order to comply with the EN 50131 series of standards, double balancing is required when either terminal T1 or T2 is configured as an input.

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.

ATTENTION!

Air2 remote-control key

2-4

EN 50131-1
EN 50131-5-3
EN 50130-4
EN 50130-5

CEB T031

The Air2 remote-control key has 4 buttons which can be programmed from the control panel.
For Air2-KF100 versions, it is possible to choose between two different graphics for the button symbols.

Table 12: Technical features of Air2 remote-control keys

Models		KF100	Pebble	Ergo
Battery		Lithium CR2032 3V		
"Low battery" fault voltage		Less than 2.4V		
Current draw	during standby	0A		
	maximum	30mA		
Buzzer		Multitone		
Operating environmental conditions	temperature	from -10 to +40°C		
	relative humidity	≤93% without condensation		
Dimensions (W x H x D)		61 x 41 x 12mm	69 x 42 x 15 mm	72 x 41 x 16mm
Weight		15g	23g	25g
Rubber button cover		2 models: - with icons - with numbers	1 model (with icons and numbered buttons)	
Security rating		2		
Environmental class		II		
Number of available PIN code combinations		2^{24}		

Table 13: Description of Air2-KF100 parts
(*Figure 4 - Air2-KF100, page 24*)

A	Key1/F1, LED1-red	**E**	Confirmation LED - red/green
B	Key2/F2, LED2-red	**F**	Icon graphic keys
C	Key3/F3, LED3-red	**G**	Keys with numbers
D	Key4/F4, LED4-red		

Thanks to the two-way signal exchange between the Air2-BS200 and the remote-control keys, all models of Air2 keys are capable of notifying the user, by means of visual and audible feedback signals (beep and LED signals) of the successful outcome of requested operations.

Table 14: Air2 remote-control keys

Push button	LED 1	LED 2	LED 3	LED 4	Buzzer signal	Operation
F1	1 flash				beep	Activates shortcut 1
F2		1 flash			beep	Activates shortcut 2
F3			1 flash		beep	Activates shortcut 3
F4				1 flash	beep	Activates shortcut 4
F2 + F3		1 flash	1 flash		beep	Block/Unblock remote-control device
F3 + F4			1 flash	1 flash	beep	Enrolling
Any		4 flashes	4 flashes			Remote-control key locked signal

Failure of the LED to light, after pressing the corresponding button and the successful execution of the command, is an indication that the wireless battery is running low.

Table 15: Panel notifications

Panel response	Confirmation LED		Buzzer signal
	green	**red**	
Command not received		1 flash	
Operation not done		4 flashes	bop
Operation done	3 flashes		long beep

A further guarantee of security regarding the signal transmissions from Air2 remote-control keys is provided by the use of a rolling code algorithm. These random codes allow the Air2-BS200 to authenticate the validity of each transmission from remote-control keys.

In the event of irregular wireless activity, denial-of-request will be signalled by an audible error signal ("bop").

To reset wireless transmissions and rolling code authentication, press and hold keys "F3" and "F4" simultaneously.

This feature is active at default but can be disabled during the programming phase of the Air2-BS200 module (details follow). If an Air2-KF100 remote-control key is used on several systems, it is impractical to leave this feature enabled.

ROLLING-CODE AUTHENTICATION

Air2-FD100 smoke detector   2-5

EN 50131-1
EN 50131-5-3
EN 50130-4
EN 50130-5

CEB T031

The Air2-FD100 detector is capable of sensing the presence of smoke particles and thus detecting a fire in its early stages.

Air2-FD100 optical smoke detector is equipped with a sampling chamber (based on light scattering mass - Tyndall effect). In order to ensure the proper operating capacity of the device, it must be installed away from drafts and large objects which may alter the airflow to the sampling chamber.

The sole task of the Air2-FD100 smoke detector is to sense for smoke in the protected area. Therefore, in no way can the combination of a system and an Air2-FD100 smoke detector be considered a fire control system.

ATTENTION!

Table 16: Air2-FD100 technical specifications

Battery	type	Lithium CR17450 3V
	estimated life	3 years
"Low battery" fault voltage		Less than 2.4V
Current draw	during standby	70µA
	maximum	Max 40mA
Operating environmental conditions	temperature	from -10 to +40°C
	relative humidity	≤93% without condensation
Height (base included)		60mm
Diameter (base included)		114mm
Weight (base and battery included)		182 gr
Security rating		2
Environmental class		II

The operating parameters can be changed and adapted to the environmental conditions, either from the control panel or through the SmartLeague software application. The detector signals alarm status when the level of smoke in the protected environment reaches the following levels:

• 0.08 dB/m (pre-set mode)
• 0.10 dB/m
• 0.12 dB/m
• 0.15 dB/m

Table 17: Description of Air2-FD100 parts
(*Figure 5 - Air2-FD100, a, page 24*)

A	Detector	E	Tamper microswitch
B	LED red/yellow/green	F	ENROLL microswitch
C	Optical chamber	G	Base
D	Battery	H	Mounting screw hole

The tricolour LED (360° visibility) indicates the detector status.

• **Green - one flash every 15 seconds**: detector not operating properly.
• **Green - one flash every 40 seconds**: low battery.
• **Yellow - On solid**: fault present.
• **Yellow - flashing**: sampling chamber contaminated (with dust, etc.).
• **Red - On solid**: detector in alarm status.

Chapter 3

OPERATING PRINCIPLES

Air2-BS200 address   3-1

In order to configure the Air2-BS200 in the control panel it is necessary to assign an address between 1 and 30 (to set the address follow the instructions in *paragraph 4-6 Addressing the Air2-BS200*).

The selected address will be assigned to the simulated reader (which processes and manages wireless transmissions in the same way as keys) and to the first 10 expansion boards, also simulated, with successive addresses "ADD", "ADD"+1, ..., "ADD"+9.

Conditions for secure deployment and operations:

• there must be no other transceivers at the selected address
• the simulated reader must be enrolled on the control panel
• there must be no other readers at the same address (nBy/X or built into the keypad)
• the simulated reader need not be associated with any partitions
• the simulated expansion boards must be enrolled on the control panel
• an expansion board will be considered part of the wireless network only when one of its terminals is configured as "wireless"
• a simulated expansion board cannot share its assigned address with other hardwired FLEX5 expansion boards.

Wireless terminals   3-2

A terminal can be considered a "Wireless" terminal only under the following conditions:

• it must not be configured as a "Double" zone (D)
• if configured as a "Zone", it must not be configured as "Shock" in the detector type field
• it must be assigned to an expansion board (and not to the control panel or keypads)

Aria Keypads and Hedera sounders   3-3

The Inim intrusion control panel can manage up to 4 Aria keypads and 4 Hedera sounders for each Air2-BS200 installed. However, each control panel model supports a maximum number of keypads and sounders which must be respected.

During the addressing phase it is necessary to use free addresses only and to ensure that no other keypads (Aria/HG, Joy, Concept, NCode or Alien) are present at the address of the Aria/W keypads, or other sounders (Ivy-B) at the address of the Hedera sounderflashers to be included in the configuration.

For the addressing procedure and the programming of these devices, refer to the respective manuals.

Chapter 4

INSTALLATION

Installing the Air2-BS200   4-1

1. Choose a suitable mounting placement.
2. Using a flat-bladed screwdriver in the enclosure screw location, push open the enclosure and separate the two parts.
3. Hold the base to the chosen mounting placement and mark the screw holes and tamper protection position.
4. Pull the wires through the cable entry and wire up the Air2-BS200.
5. Using the screws, secure the base and the tamper protection in position.
6. Set the selection jumpers for the Bus type (position *A* for I-BUS or position *B* for RS485).
   If necessary, in the case of the RS485 BUS, set the jumper for the EOL position (position *C* for EOL).
7. Enroll the device.
8. Re-attach the cover to the base and replace the enclosure screw.
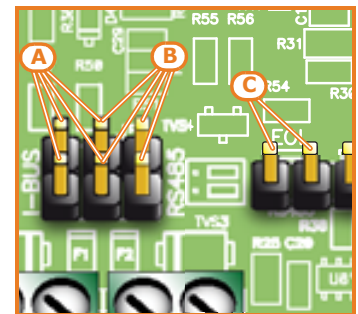
Installing the Air2-MC200   4-2

1. Choose a suitable mounting placement.
2. Using a flat-bladed screwdriver in the enclosure screw location, push open the enclosure and separate the two parts.
3. Hold the base to the chosen mounting placement and mark the screw holes and tamper protection position.
4. Using the screws, secure the base and the tamper protection in position.
5. Insert the battery, ensure you respect the proper polarity.
6. Enroll the device.
7. If you wish to fit the magnet, work through the steps described in the previous paragraph.
8. Re-attach the cover to the base of the contact and replace the enclosure screw.

Installing the Air2-MC300   4-3

1. Choose a suitable mounting location.
2. Open the enclosure by pushing lightly on the anchor tab and separate the two parts.

Be careful not to remove the circuit from its housing.   **ATTENTION!**

---

3. If you are using terminals **T1** and **T2**, pass the cables through the cable entry and connect them. Take care to ensure that inadmissible cable filaments do not come into contact with each other or with the + clip of the battery.
4. Hold the base to the chosen mounting placement and mark the points for the base attachment and tamper protection.
5. Using the screws, secure the base and the tamper protection in position.
6. If you wish to fit the magnet by means of the screws (included), remove the magnet base by means of a flat-bladed screwdriver.
7. Position the magnet base on the desired side (long or short) of the magnetic contact at a distance of about 2mm.

If you are using the long side, centre the notches on the side of the base in such as way as to obtain the correct alignment and functioning capacity of the magnet. If you are using the short side, align the magnet and the detector itself.

8.   Using the screws or the adhesive tape, attach the magnet.
9.   Remove the battery tab.
10. Re-attach the cover to the base of the contact and replace the enclosure screw.
11. Enroll the device.

Installing the Air2 remote-control key   4-4

The Air2 requires enrolling only.

If it becomes necessary to replace the device cover or battery, work through the following steps.

1.   Remove the enclosure screw on the back of the remote-control key and open the device.
2.   Remove the cover.
3.   Replace the cover/battery as required.
4.   Close the device and replace the enclosure screw.
5.   Enroll the remote-control key.

Installing the Air2-FD100   4-5

1.   Choose a suitable mounting placement.
2.   Hold the base to the chosen mounting placement and mark the screw locations.
3.   Insert the battery, ensure you respect the proper polarity.
4.   Attach the battery cover.
5.   Refer to *Figure 6 - Air2-FD100, b, page 25*.
     Position the detector over the base and, with minimum force, turn it clockwise until notch "A" aligns with notch "B" (in order to attach the detector to the base); turn it still further until notch "A" aligns with notch "C" (in order to allow the base to close the tamper microswitch).
6.   Enroll the device.

Addressing the Air2-BS200   4-6

During the enrolling phase the Air2-BS200 wireless transceiver is integrated into the Inim intrusion control panel by simulating:

•   a reader, with the address programmed via the module itself (ADD), by means of buttons P1 and P2 on the PCB;
•   up to 10 expansion boards, at addresses ADD, ADD+1, ... ADD+9, capable of managing the terminals configured via the project template.

The address must be set during the programming phase of the reader. During this phase the address is indicated by LEDs DL 1-4 in accordance with the following:

Table 18: Panel notifications

Reader address	LED DL1 - red	LED DL2 - blue	LED DL3 - green	LED DL4 - yellow
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0

0	LED Off
1	LED On
L	Flashing LED

Table 18: Panel notifications

11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1
16	0	0	0	L
17	0	0	L	0
18	0	0	L	L
19	0	L	0	0
20	0	L	0	L
21	0	L	L	0
22	0	L	L	L
23	L	0	0	0
24	L	0	0	L
25	L	0	L	0
26	L	0	L	L
27	L	L	0	0
28	L	L	0	L
29	L	L	L	0
30	L	L	L	L

1. Put the intrusion control panel in maintenance mode.
2. Press button P1 to access the address setting menu. During this phase the PRG LED will switch On and the LEDs will show the current address.
3. Use the P2 to reach the address to be assigned.
4. Use the P1 button to assign the address and exit the menu (phase 0).
5. Include the wireless expansion boards in the control panel configuration, starting from the "ADD" address (maximum "ADD" +9).
6. Enroll the wireless reader at the "ADD" address.

Once the control panel has completed the reading procedure, go to the programming template of the configured readers. The reader simulated by the Air2-BS200 transceiver is the one with the "ADD" address set by the module itself.   **Via software**

Type-in Code (Installer PIN) , PROGRAMMING Readers , ChoosePeripheral   **Via keypad**

In the list of configured readers, the reader simulated by an Air2-BS200 has a"W" at the end of its description.

Pressing and holding the P2 button during normal operating status of the Air2-BS200 will allow you to view (but not change) the transceiver address indicated on its LEDs.

Enrolling devices   4-7

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

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

Press the number key 6 mno ; "Wireless" will appear on the last line of the display (pressing button again will disable the wireless attribute on the terminal).

Right-click and select "Wireless" (the PCB image will change to colour only after a successful enrollment procedure of the relative devices).   **Via software**

If a terminal on the expansion board is configured as "wireless", all the remaining terminals must be configured as "wireless" terminals.   **Note**

---

3. Enrolling the terminal:

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

Enroll the terminal by selecting the type.

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. **Via software**

Table 19: Wireless terminal types

Air2 device		Single/Double	Via software	Via keypad
IR100		Single	**Infrared**	Infrared detectors
MC300	Reed contact	Single	**Magnetic contact**	Magnetic Contact
	Terminal "T1"	Single	**Terminal 1 Magnetic contact**	Terminal T1 MC
	Terminal "T2"	Single	**Terminal 2 Magnetic contact**	Terminal T2 MC
FD100		Single	**Smoke detector**	Smoke detector
XIR200W		Single	**Passive infrared detector**	Single T detector
OTT100W		Single	**Outdoor terminal**	OutdoorDetector
ODI100W		Single	**Outdoor terminal**	OutdoorDetector
UT100		Single	**Outdoor terminal**	OutdoorDetector
MC200		Double	**MC200 magnetic contact**	Cont.Magn.MC200
DT200T	Curtain detector	Double	**Curtain detector**	Curtain detector
	Detector direction	Double	**Directional detector**	Curtain direction
XDT200W		Double	**Dual technology detector**	Dual T detector

4. For Air2 devices press the **ENROLL** button.
5. If you are enrolling an output device that is connected to a terminal of any device with an Air2-MC300 output terminal, you must enable the "Broadcast RF" zone option.
    Once done, you must step back to the configuration of the terminal and configure it as an "OUTPUT".

The "Broadcast RF" option must be enabled for each terminal of the Air2-MC300 device concerned. **Note**
---

6. Enroll all remote controls in the same way as you would enroll keys, and select as the reader the one with the same address as the expansion.
7. Set the parameters of the zones, outputs and keypads.

After changing the battery, it is advisable to press the **ENROLL** button in order to be sure that the device is synchronized with the wireless transceiver. **CHANGING THE BATTERY**

If you are installing Air2-MC300 devices in the system together with Air2-MC100 (no longer in production), distinction of the type of device may be possible for any control panel under the following conditions: **ENROLLING THE MC300**
• The Air2-BS200 firmware version must be 5.00 or higher
• The SmartLeague software version must be 3.5.1.5 or higher
• The Prime/STUDIO software version must be 1.00 or higher

If you are using an Air2-BS100 transceiver, distinction between Air2-MC300 and Air2-MC100 is impossible.

Chapter 5

PROGRAMMING

Programming an Air2 system consists of simply programming the parameters of the transceiver. During the enrolling phase the transceiver simulates a reader and during the normal operations it simulates an expansion board and has control of the devices represented by wireless terminals.

Each Air2 device that transmits to the control panel through the Air2-BS200 has parameters and function options, accessible through the programming sections relating to the control panel terminals.

EXAMPLE

To program an intrusion control panel which requires:
- 12 hardwired zones of which 3 on the control panel, 2 on a keypad, 7 on 2 expansion boards
- 18 wireless zones
- 5 remote-control keys

Minimum requirements: 18/5=4 expansion boards; if the 2 expansion boards are for the hardwired zones assign them to addresses 1 and 2; set the Air2-BS200 DIP-microswitches to address 3 (LED DL1 Off, DL2 Off, DL3 On, DL4 On).

Enroll expansion boards 3, 4, 5 and 6 and reader 3 on the control panel.

In the "Terminals" programming section, select terminal T1 of expansion board 3 and enroll the detector. Enroll all the wireless devices consecutively.

In the "Keys-Enroll" programming section, select reader 3 then select the number of remote-control keys you wish to enroll.

Programming the Air2-BS200   5-1

Programming of the Air2-BS200 transceiver, with transmission parameter settings for all Air2 devices, is possible via Inim's programming software, via Prime system keypads and, if the transceiver is installed in a SmartLiving system, directly by means of the buttons on the device itself (*paragraph 5-3 Programming via the Air2-BS200 module*).

Via software

Inim's programming softwares have sections that allow you to view all the enrolled wireless devices and set the programming parameters of each individual Air2-BS200 transceiver.

The "Wireless transceivers" section is divided in sub-sections, one for each receiver configured.

Each sub-section shows:
- the transceiver model
- the firmware version of the transceiver board
- the transceiver parameters
- a list of devices enrolled by the transceiver;
  for each device it shows:
  - the Icon
  - the terminals (where present)
  - the serial number
  - the model

Table 20: Menu bar for wireless transceivers

Key	Function
Read	Button for reading from the control panel and writing on the control panel the data relative the configuration of the wireless transceivers.
Write	Clicking-on this button opens the "Wireless" window where you can select the transceivers from those configured.
Clone remote-control keys	This button starts the guided cloning process for the wireless keys enrolled by the transceiver of the selected reader. The guide allows you to indicate which transceiver, from those selectable, the cloned keys will be assigned to.
RF	This button starts an operation which attenuates (6db) the wireless signal transmitted by the transceivers for 5 minutes. During this period the installer can carry out tests on the stability of the RF connection under weak-signal conditions.

Table 21: Wireless transceiver parameters

Parameter	Function
Channel	Section for the selection of the wireless communication channel used by the transceiver that simulates the reader that is undergoing programming: - Channel 001, 868.1MHz - Channel 002, 868.3MHz - Channel 003, 868.5MHz
Disable tamper protection	This option disables the tamper signal of the Air2-BS200 transceiver.
Disable the Rolling Code	This option disables the rolling code algorithm during the transmission of wireless commands via the Air2-BS200 transceiver. If an Air2-KF100 remote-control key is used on several systems, it is impractical to leave this feature enabled.

The above-mentioned parameters can be accessed also from a Prime keypad:

Type-in Code (Installer PIN) , PROGRAMMING Readers , ChoosePeripheral, "reader W"   **Via keypad**

Programming wireless terminals   5-2

The parameters necessary for enrolling and programming wireless terminals will be displayed only when the terminal has been previously defined as "Wireless".

These parameters vary depending on both the type of device and wireless terminal to be configured and the control panel to which they are connected.

Table 22: Wireless terminal parameters

Device	Terminal type	Parameter	
		SmartLiving	**Prime**
All devices	/	**Disable detector when partition is disarmed** In order to increase battery life, the PIR detector will deactivate when the partitions it belongs to are disarmed and will only activate when the partitions it belongs to arm. Deactivated detectors do not generate alarms. When the partitions arm, there may be a delay of up to 3 minutes before the detector receives the activation command.	
		Use detector LED The red LED on the device provides visual signalling of alarm or tamper conditions on the device itself. This option will be enabled on all the terminals of the Air2 device.	
		Bypass tamper If this option is disabled, open/dislodgement tamper on Air2 detectors will not generate the respective events.	
		Alarm pulses This is the number of pulses (each 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.	
		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 "Al.pulse Duration"). The number of alarm pulses must equal or exceed the value programmed for "Alarm pulses", before the system generates 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.	
IR100	Infrared	**Detector sensitivity**	
		from 1 (least sensitive) to 4 (most sensitive)	from 1 (least sensitive) to 10 (most sensitive)
FD100	Smoke detector	**Detector sensitivity**	
		1=0.08 dB/m; 2=0.10 dB/m; 3=0.12 dB/m ; 4=0.15 dB/m (default)	from 1 (=0,08 dB/m) to 10 (=0.15 dB/m default)
XIR200W	Passive infrared detector	**Infrared detector sensitivity**	
		from 1 (least sensitive) to 15 (most sensitive) 10 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Tamper detector sensitivity	
		from 1 (least sensitive) to 10 (most sensitive) 5 is the default value	from 1 (least sensitive) to 10 (most sensitive) 3 is the default value
OTT100W ODI100W UT100	Outdoor terminal	**Infrared detector sensitivity**	
		from 1 (least sensitive) to 15 (most sensitive) 10 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Tamper detector sensitivity	
		from 1 (least sensitive) to 10 (most sensitive) 5 is the default value	from 1 (least sensitive) to 10 (most sensitive) 3 is the default value

English

Table 22: Wireless terminal parameters

Device	Terminal type	Parameter	
		SmartLiving	**Prime**
XDT200W	Dual technology detector	**Infrared detector sensitivity**	
		from 1 (least sensitive) to 15 (most sensitive) 10 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Microwave detector sensitivity	
		from 1 (least sensitive) to 15 (most sensitive) 10 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Tamper detector sensitivity	
		from 1 (least sensitive) to 10 (most sensitive) 5 is the default value	from 1 (least sensitive) to 10 (most sensitive) 3 is the default value
		Masking detector sensitivity	
		from 1 (least sensitive) to 10 (most sensitive) 5 is the default value	from 1 (least sensitive) to 10 (most sensitive) 3 is the default value
DT200T	Curtain detector	**Infrared detector sensitivity**	
		from 1 (least sensitive) to 15 (most sensitive) 10 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Microwave detector sensitivity	
		from 1 (least sensitive) to 15 (most sensitive) 10 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Tamper detector sensitivity	
		from 1 (least sensitive) to 10 (most sensitive) 5 is the default value	from 1 (least sensitive) to 10 (most sensitive) 3 is the default value
		Masking detector sensitivity	
		from 1 (least sensitive) to 10 (most sensitive) 5 is the default value	from 1 (least sensitive) to 10 (most sensitive) 3 is the default value
	Detector direction	No parameter to program	
MC300	Magnetic contact	**Selection of the magnetic reed contact** - Magnet long side - for detection on the long side of the magnetic contact. - Magnet short side - for detection on the short side of the magnetic contact. - Both magnets - for detection on at least one side of the magnetic contact.	
		Tamper on inactive reed relay Detects tamper on the Air2-MC300 magnetic-contact when both reeds are in standby status.	
		Broadcast RF This option assures the activation/deactivation of the output within 2 seconds of the control panel command. Valid only for terminals T1 and T2 of Air2-MC300 configured as outputs.	

Table 22: Wireless terminal parameters

Device	Terminal type	Parameter	
		SmartLiving	**Prime**
MC200	Magnetic contact	**Shock detector sensitivity**	
		from 1 (least sensitive) to 63 (most sensitive) 63 is the default value	from 1 (least sensitive) to 10 (most sensitive) 6 is the default value
		Maximum angle allowed before signalling of tilting occurs.	
		from 1 (minimum tilt) to 15 (about 90° in respect to the normal position) 1 is the default value	from 1 (minimum tilt) to 10 (about 90° in respect to the normal position) 1 is the default value
		Delay time after which the detection of tilting will be signalled. from 1 to 125 (100msec or sec)	

The programming softwares also have a "Real-time"section which allows you to view the current values of the following features of the wireless device:

Table 23: Real-time for wireless zones

Parameter	
Reading level	The value read by each detector of the device is displayed on a bar which indicates the alarm threshold by means of a colour change from green to red.
Battery charge level	Percentage of the device battery charge.
Signal reception	This is a series of notches that represent the signal reception strength on the device as received by the Air2-BS200 transceiver.
RF analysis	This button opens a window which allows you to monitor the signal variations transmitted by the device and any detected background noise.

Programming via the Air2-BS200 module   5-3

Programming done from an Air2-BS200 module allows you to set some of the Air2 programming parameters only when used with a SmartLiving system.

This programming also includes a specific section for the addressing of the Air2-BS200, available for both SmartLiving and Prime control panels.

The available programming phases correspond to the 6 different sections in the Programming menu. Use the buttons and LEDs on the PCB of the module to navigate through the 6 programming phases.

1. Press the P1 button.
    The programming menu will open.
2. Press the button again until access to the required phase is achieved. LED DL3 will emit a number of blinks corresponding to the current phase.
3. Using the P2 button carry out any changes (where required). Where required, LED DL4 will show the current data.
4. Save any changes and exit the programming session.
    This can be done in two ways:
    • Use the P1 button to step back.
    • Press and hold the P2 button for at least 3 seconds. The 5 LEDs will light to confirm that the data has been saved.
      If this procedure is carried out during phase 2, the device will reset to factory default settings.

Stand-by: normal operating phase of the Air2-BS200 and its LED.   **PHASE 0**

During this phase it is possible to exit programming and save any changes.

Enroll: LED DL3 will emit in series 1 blink followed by a pause. LEDs DL1, DL4 and PRG will remain off.   **PHASE 1**

Press the "ENROLL" button on the device you wish to enroll. Press simultaneously buttons F3 and F4 on the remote-control key. Within 4 seconds, LED DL2 should flash to indicate correct reception of the device and its enrollment.

Unenroll: LED DL3 will emit in series 2 blinks followed by a pause. LEDs DL1, DL4 and PRG will remain off.   **PHASE 2**

Press the "ENROLL" button on the device you wish to unenroll (delete). Press simultaneously buttons F3 and F4 on the remote-control key. Within 4 seconds, LED DL2 should flash to indicate that the device has been received and unenrolled.

Change transmission/reception channel: LED DL3 will emit in series 3 blinks followed by a pause.   **PHASE 3**

LED DL4 emits a number of blinks equal to the number of the current channel. 3 channels are available. Press button P2 to activate the successive channel to the one currently operating on the Air2-BS200 module. At this point, press the "ENROLL" button on all the detectors and sounders, access the "ENROLL" menu on the Aria keypad and press buttons F3 and F4 simultaneously on all the remote-control keys. This will synchronize the system wireless devices with the new channel.

Enable/Disable tamper Air2-BS200: LED DL3 will emit in series 4 blinks followed by a pause.   **PHASE 4**

LED DL4 indicates the status of this option: OFF = Tamper enabled; ON = Tamper disabled. Press button P2 to toggle the status of this option. If the Tamper option is disabled, the status of both microswitches will be ignored.

Enable/Disable rolling-code authentication on Air2-KF100: LED DL3 will emit in series 5 blinks followed by a pause.   **PHASE 5**

LED DL4 indicates the status of this option: OFF = Rolling code authentication enabled; ON = Rolling code authentication disabled. Press button P2 to toggle the status of this option.

Addressing: LED PRG will go On solid. LED DL1-4 indicates the current address.   **PHASE 6**

This phase is available on all control panel models. Refer to *paragraph 4-6 Addressing the Air2-BS200*.

To restore the factory default settings, press and hold the P2 button until the 4 LEDs (DL) come ON during **Phase 2 - Unenroll**, as previously described.   **FACTORY DATA**

Programming from the Control panel   **5-4**

The actual programming process for Inim control panels offers the following parameters for the management of the Air2 wireless system:

Table 24: Control panel parameters

| Parameter	Function
Instant reset of wireless magnetic contact	If this option is enabled, reset of the magnetic reed sensor of wireless detectors will be signalled instantly (otherwise signalling has a maximum delay of 10 seconds).
Wireless supervision time	This parameter allows the selection of the supervision time of wireless devices. On expiration of the programmed time, any wireless devices which do not respond will be signalled as lost. Accepted values: 12 to 250 minutes.
Wireless data reset	After selecting this option, pressing the **OK** will delete all the data relating to the Air2-BS200 device. The data relating to the wireless detectors and remote-control key will not be contextually deleted, nor will the devices simulated by the Air2-BS200 transceiver be deleted from the configuration.

1 - Air2-BS200

PCB

2 - Air2-MC300
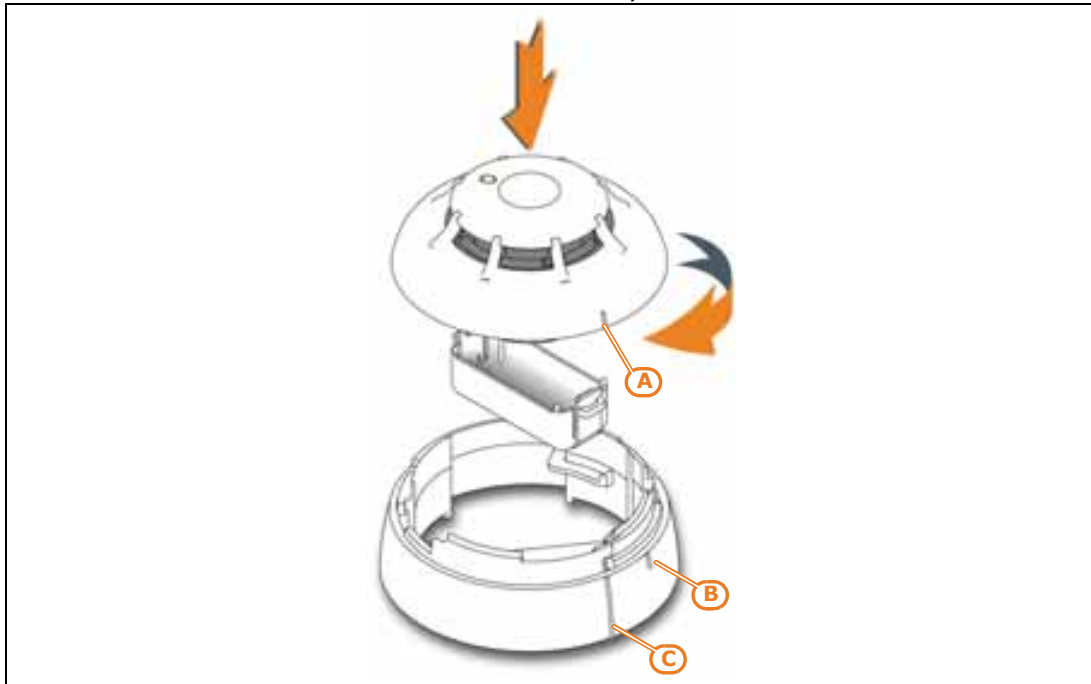
Air2-MC300 - retro

Air2-MC300 - interno

3 - Air2-MC200

PCB
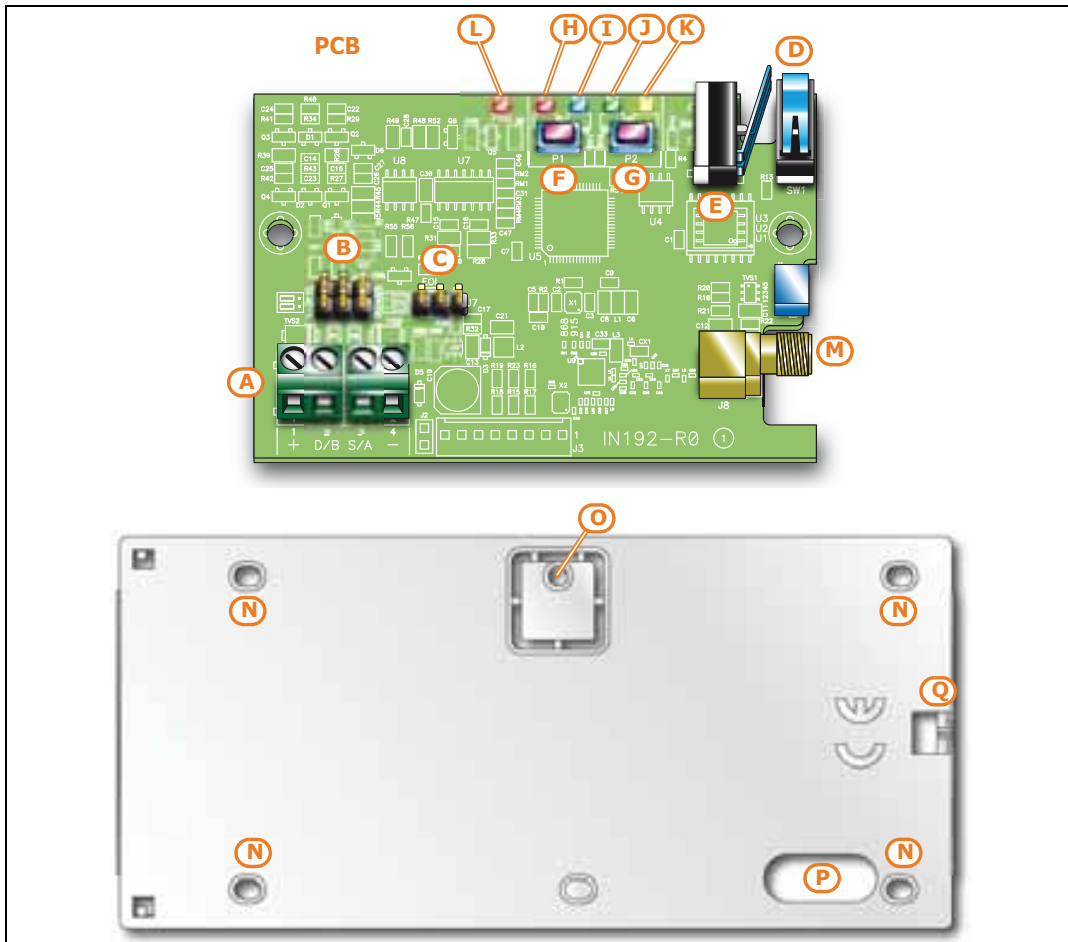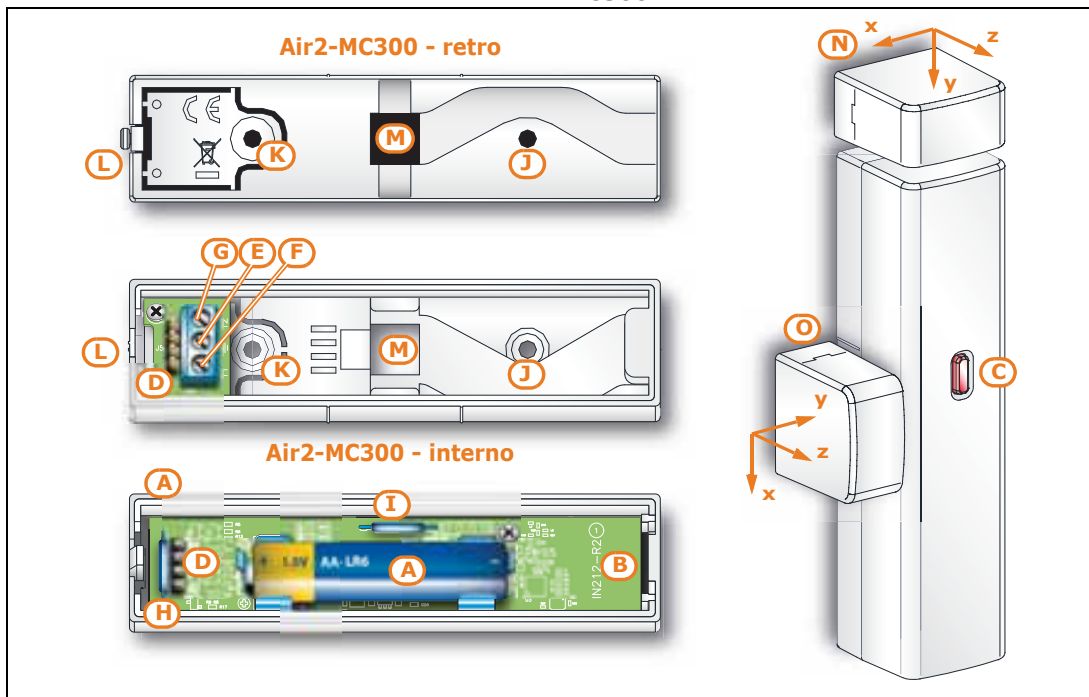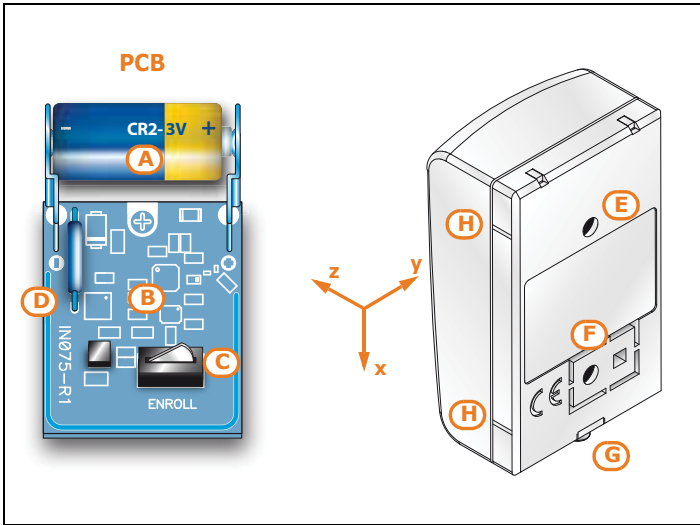
4 - Air2-KF100
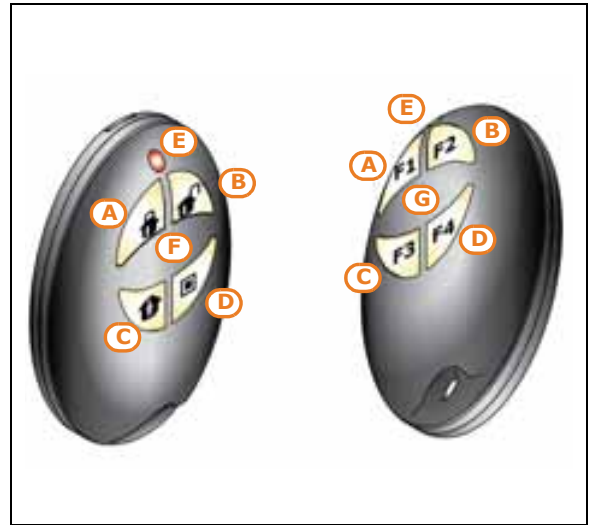
5 - Air2-FD100, a
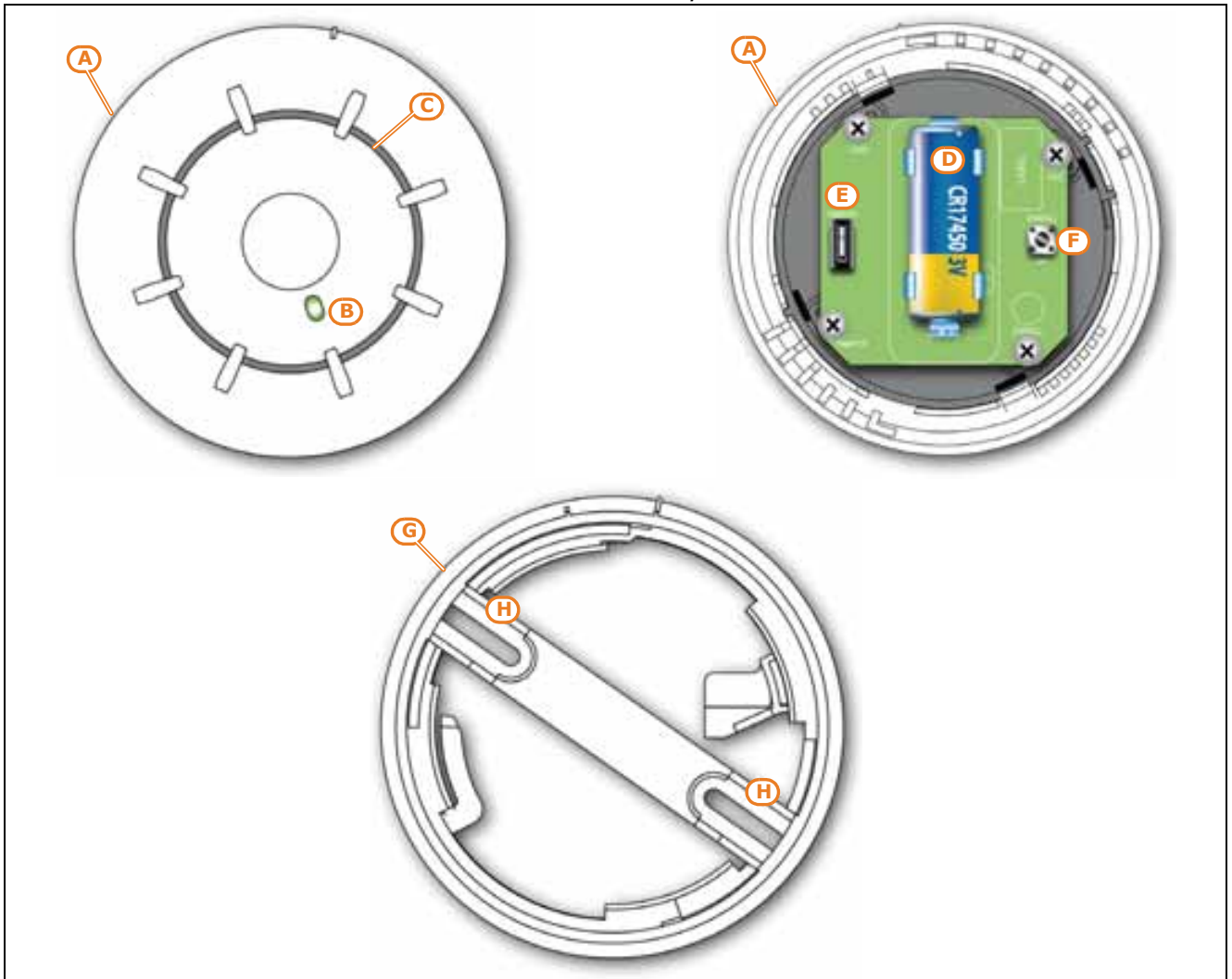
6 - Air2-FD100, b

CORPORATION   Innovative Electronic Solutions

www.ness.com.au

National Customer Service Centre
Ph: 1300 551 991
techsupport@ness.com.au

SMARTLIVING
WIRELESS DEVICES MANUAL