



EN 50131-1
EN 50131-3
EN 50130-4
EN 50130-5
CEB T031



Flex5/R

5 relay outputs expansion module

Installation and programming manual



Table of contents

1. Description of Flex5/R	3
1.1 Description of parts	4
1.2 Technical specifications of Flex5/R	5
2. Installation of Flex5/R	6
2.1 Anti-tamper	6
2.2 Flex5/R board connections	7
2.3 Connecting to the I-BUS line	9
2.4 Flex5/R project	10
2.4.1 Addressing of Flex5/R	11
2.4.2 Addressing from Flex5/R	11
2.4.3 Enrolling of Flex5/R	13
3. Programming of Flex5/R	15
3.1 Programming the expansion boards	15
3.1.1 Expansion parameters	15
4. General information	16
4.1 About this manual	16
4.2 Manufacturer's details	16
4.3 Simplified EU Declaration of Conformity	16
4.4 Warranty	16
4.5 Limited warranty	17
4.6 Documents for the users	17
4.7 Disposal of the product	17

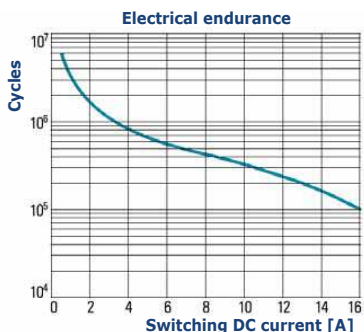
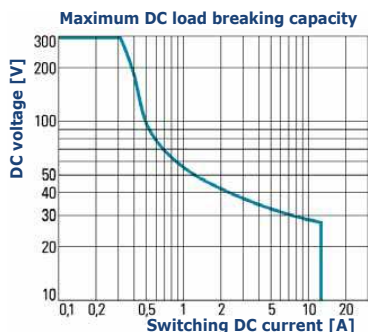
1. Description of Flex5/R

Flex5/R is a peripheral that provides 5 terminals for the control of both AC and DC loads.

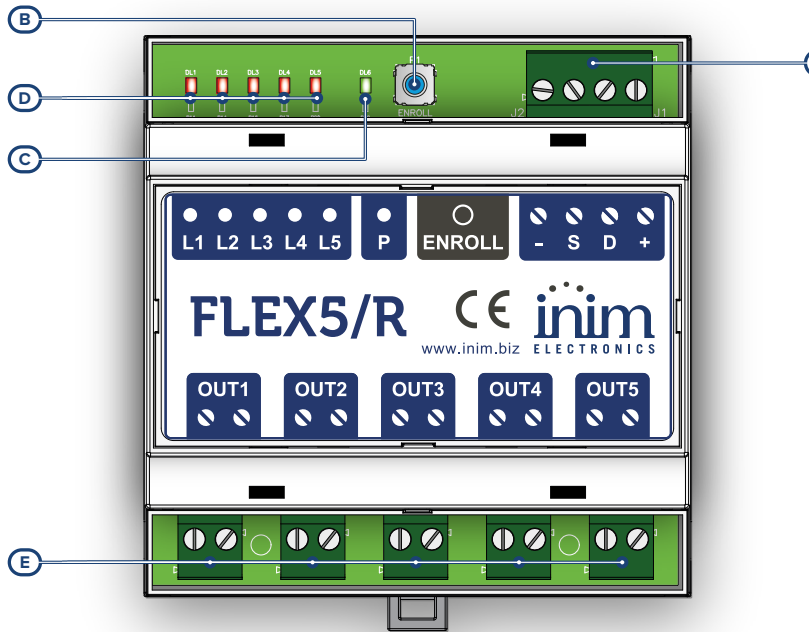
Each terminal can be configured in the control panel as a relay output, dry contact for DC and AC devices up to a maximum of 10A.

Relay output

In the case of relay use outputs with DC currents, it is advisable to consult the following diagrams for the correct sizing of the system loads based on the supplied current:



1.1 Description of parts



[A]	I-BUS terminals
[B]	'ENROLL' button
[C]	LED 'P' (enrolling / setting address)
[D]	LEDs 'L1, ..., L5' (output status / setting address)
[E]	Relay output terminals

LED signalling

The 'P' LED, during the automatic enrolling phase via the control panel, will blink rapidly.

LEDs 'L1, ..., L5', during normal functioning of the device, indicate the status of the outputs:


- LED on, relay active
- LED off, relay inactive

During the manual addressing process, LEDs 'P' and 'L1, ..., L5' indicate the address of the peripheral, in accordance with the table provided in the *device project* paragraph.

1.2 Technical specifications of Flex5/R

Power supply voltage	from 9 to 15 V $\overline{=}$	
Current absorption	250mA max	
	Purely resistive loads:	Max 16A @ 230V~ Max 16A @ 30V
	Incandescent lamps:	Max 8A
	Fluorescent lamps:	Max 0.5A
	LED lamps:	100W @ 230V~ 30W @ 120V~
	Electronic transformers:	4A
Relay features	Motors (cos ϕ min 0.6):	3.5A
Range of the voltage connectible to the OUTx output		
Alternating Current	from 0 to 253V~, 50/60Hz	
	from 0 to 253V $\overline{=}$	@0.35A
continuous current	from 0 to 28V $\overline{=}$	@10A
Operating environmental conditions		
Temperature	from -10 to +40 °C	
Relative humidity	\leq 75% without condensation	
Security rating	2	
Environmental class	II	
DIN-rail mount	5 module enclosure	
Dimensions (W x H x D)	88 x 90 x 58 mm	
Weight	180 gr	



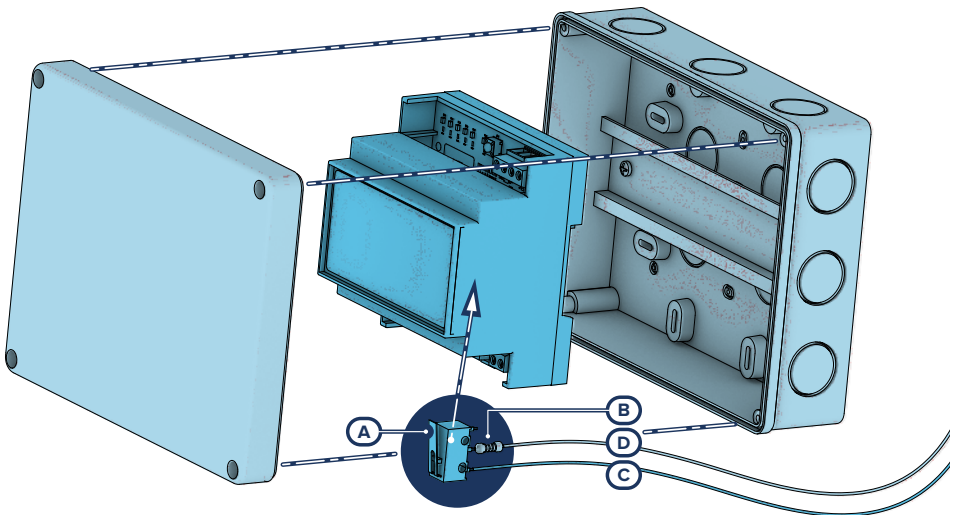
Isolation class		
Terminal type	+ D S -	ES1, PS2
	OUT1, ..., OUT5	ES3, PS3

2. Installation of Flex5/R

The Flex5/R device is DIN-Rail mount compatible.

It must be installed inside a fireproof enclosure with UL 94-5V flamability rating.

2.1 Anti-tamper



The peripherals with visible terminals and which do not have an anti-tamper device can still be equipped with protection by intervening on the assembly procedure.

Please note that in order to comply with security standards, all the control panel peripherals must be protected against tamper.

Here we provide information on one of the possible procedures that can be adopted. This involves the assembly of a microswitch on the device, which signals any attempted tamper, and the consequent programming of the terminal used for this contact.

1. Procure a microswitch with at least two normally-open contacts [A] (preferably with 3 contacts: COM-NO-NC).
2. Employ a terminal and program it as a '24H' input, whose description type is 'Tamper', balanced with a single $6K8\Omega$ [B] resistance, unlimited alarm cycles and belonging to a partition that is viewable on at least one keypad.
3. Using 2 wires, connect the microswitch to the '24H' input terminal.

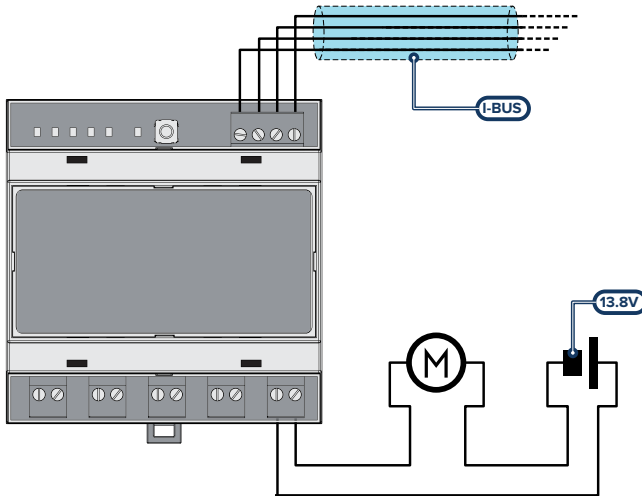
4. On the microswitch:
 - identify the common contact (COM) and connect it using one of the two wires, to the GND terminal of the '24H' terminal [C].
 - identify the normally open contact (N.O., which is the contact that generates a short-circuit between the contact itself and the COM contact when the switch lever is compressed) and connect one end of the 6k8Ω resistor to it [D].
Connect the other end of the resistance to the wire which is connected to the '24H' input terminal.
5. Install the microswitch in such a way that under normal conditions the switch lever is compressed. If a tamper attempt occurs, the lever will release thus generating the opening of the contact and an immediate alarm on the '24H' terminal.

Note

This wiring method can be applied in most situations, however, it is only a point of reference. In order to ensure proper protection, you must always take in to account the specific mechanical and electrical conditions of the device you are working on.

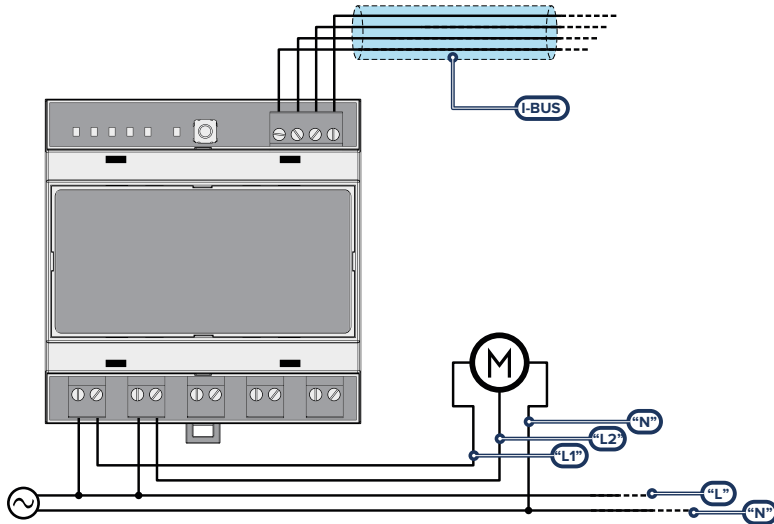
2.2 Flex5/R board connections

As a peripheral, Flex5/R must be connected to the control panel through the available '+ D S -' terminals.



Use of the Flex5/R to drive roller-shutter motors (single-phase bidirectional asynchronous motors) is achieved through the use of 2 terminals.

A necessary condition is that the 2 outputs used have the interlock function active between them.



Terminals that can have the interlock function activated between them are:

- the 'OUT1' and 'OUT2' pair
- the 'OUT3' and 'OUT4' pair

Attention!

The mains line must be protected by a safety-standards compliant circuit breaker (trip switch).

The circuit breaker (trip switch) must be located externally to the apparatus and should be easily accessible.

The distance between contacts must be at least 3mm.

The manufacturer strongly advises the use of a magnetothermic switch with C intervention curve and maximum nominal current - 16A.

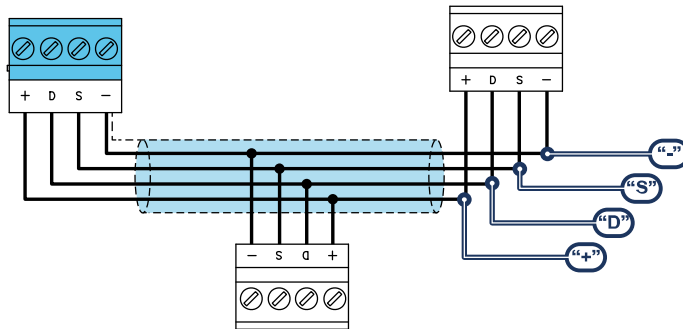
The electrical earthing system of the site must be compliant with all safety standards and laws in force.

Be careful during the mains connection phase.

Danger of electric shock.



2.3 Connecting to the I-BUS line



The peripheral devices of Inim Electronics control panels are to be connected to the control panel via the I-BUS.

The connection between the control panel and its peripherals is achieved through a shielded 4 wire (or more) cable.

Attention!

The shield must be connected to one of the ground terminals (or GND) only on the control panel side and must follow the entire BUS without being connected to ground in other points.

The control panel connection is done using terminals '+ D S -' on the motherboard.

Sizing

The sizing of the I-BUS line, i.e. the distribution of peripherals and the use of cables to connect them, must be done on the basis of various project factors, in order to ensure the diffusion of the signals of conductors 'D' and 'S' and the power supplied by conductors '+' and '-'.

The factors are:

- The current consumption of the connected devices.

In the case of insufficient power supply from the BUS line to peripherals and detectors (refer to the Technical specifications table), this can also be supplied by external power supplies.

- Cable type

The cable section used affects the dispersion of the conductor signals.

Recommended cable

Cable AF CEI 20-22 II	number of conductors	section (mm ²)	I-BUS terminal
4 wire cable + shield	2	0.5	+ -
	2	0.22	D S



Cable AF CEI 20-22 II	number of conductors	section (mm ²)	I-BUS terminal
6 wire cable + shield	2	0.5	+ -
	2	0.22	D S
	2	0.22	available
6 wire cable + shield	2	0.75	+ -
	2	0.22	D S
	2	0.22	available

- Communication speed over the BUS

This parameter can be changed by means of the programming software (38.4, 125 or 250kbs).

BUS sizing

BUS speed	maximum admissible length (sum of the sections downstream of the control panel or of an isolator)
38.4kpbs	500m
125kpbs	350m
250kpbs	200m

- Number and distribution of IB200 isolators.

To increase the reliability and the extension of the BUS, it is necessary to use isolators.

2.4 Flex5/R project

After installing the control panel peripherals and connecting them to the BUS, it is necessary to allow the control panel to recognize and distinguish one from another in order for them to be placed in the configuration.

This is possible firstly by assigning an address to each peripheral.

The addressing procedure changes in accordance with the type of peripheral. The types available are:

- keypads (both with keys and LCD display and also with touch-screens)
- proximity readers (both stand-alone and integrated into keypads)
- expansions (both with input/output and relay terminals)
- sounder/flasher
- home-automation modules
- thermostats
- wireless transceivers

Warning

Peripherals of different types can have the same address, whereas peripherals of the same type must always have different addresses.

Wireless transceivers must have different addresses from those of readers and expansions.

After assigning all the addresses, it is necessary for the control panel to carry out the peripheral enrolling procedures in order to include them in the system configuration that the control panel will manage.

2.4.1 Addressing of Flex5/R

Via keypad

Type in Code (Installer), PROGRAMMING EnrolPeripherals Peripherals

This section will allow you to carry out the enrolling process in two different ways:

- by manually entering the 14-digit serial code shown on the package of the device
- by pressing the 'ENROLL' button on the device

Following this operation, the device will transfer the serial code to the control panel.

Note

All the letters entered for the code must be uppercase.

The control panel will put forward the first free address for the type of peripheral identified. The installer can change this address as desired or confirm it by pressing the **OK** button.

2.4.2 Addressing from Flex5/R

When configuring the device with Inim Electronics control panels that do not support a programming process such as described above, it is possible to assign an address manually.

This method requires the use of the 'ENROLL' button and LEDs 'L1', ..., 'L5' and 'P'.

A maximum of 100 addresses can be set in this way.

The procedure to be followed is as follows:

1. Press and hold the 'ENROLL' button for 3 seconds.
2. After 3 seconds the device accesses address programming mode.
The current address is indicated on the red LEDs in binary mode, as shown in the table below.
3. Each time the 'ENROLL' button is pressed the address increases by one unit.
Press the button repeatedly until the LEDs indicate the desired address.

If no action is taken for over 10 seconds, the device will exit autonomously without setting the selected address.
4. Press and hold the 'ENROLL' button for 3 seconds to confirm the selected address.

0	LED Off
1	LED On
L	Flashing LED

Address	LED L1	LED L2	LED L3	LED L4	LED L5	LED P	Address	LED L1	LED L2	LED L3	LED L4	LED L5	LED P
1	0	0	0	0	0	1	51	1	1	0	0	1	1
2	0	0	0	0	1	0	52	1	1	0	1	0	0
3	0	0	0	0	1	1	53	1	1	0	1	0	1
4	0	0	0	1	0	0	54	1	1	0	1	1	0
5	0	0	0	1	0	1	55	1	1	0	1	1	1



6	0	0	0	1	1	0	56	1	1	1	0	0	0
7	0	0	0	1	1	1	57	1	1	1	0	0	1
8	0	0	1	0	0	0	58	1	1	1	0	1	0
9	0	0	1	0	0	1	59	1	1	1	0	1	1
10	0	0	1	0	1	0	60	1	1	1	1	0	0
11	0	0	1	0	1	1	61	1	1	1	1	0	1
12	0	0	1	1	0	0	62	1	1	1	1	1	0
13	0	0	1	1	0	1	63	1	1	1	1	1	1
14	0	0	1	1	1	0	64	0	0	0	0	0	L
15	0	0	1	1	1	1	65	0	0	0	0	L	0
16	0	1	0	0	0	0	66	0	0	0	0	L	L
17	0	1	0	0	0	1	67	0	0	0	L	0	0
18	0	1	0	0	1	0	68	0	0	0	L	0	L
19	0	1	0	0	1	1	69	0	0	0	L	L	0
20	0	1	0	1	0	0	70	0	0	0	L	L	L
21	0	1	0	1	0	1	71	0	0	L	0	0	0
22	0	1	0	1	1	0	72	0	0	L	0	0	L
23	0	1	0	1	1	1	73	0	0	L	0	L	0
24	0	1	1	0	0	0	74	0	0	L	0	L	L
25	0	1	1	0	0	1	75	0	0	L	L	0	0
26	0	1	1	0	1	0	76	0	0	L	L	0	L
27	0	1	1	0	1	1	77	0	0	L	L	L	0
28	0	1	1	1	0	0	78	0	0	L	L	L	L
29	0	1	1	1	0	1	79	0	L	0	0	0	0
30	0	1	1	1	1	0	80	0	L	0	0	0	L
31	0	1	1	1	1	1	81	0	L	0	0	L	0
32	1	0	0	0	0	0	82	0	L	0	0	L	L
33	1	0	0	0	0	1	83	0	L	0	L	0	0
34	1	0	0	0	1	0	84	0	L	0	L	0	L
35	1	0	0	0	1	1	85	0	L	0	L	L	0
36	1	0	0	1	0	0	86	0	L	0	L	L	L
37	1	0	0	1	0	1	87	0	L	L	0	0	0
38	1	0	0	1	1	0	88	0	L	L	0	0	L
39	1	0	0	1	1	1	89	0	L	L	0	L	0
40	1	0	1	0	0	0	90	0	L	L	0	L	L
41	1	0	1	0	0	1	91	0	L	L	L	0	0
42	1	0	1	0	1	0	92	0	L	L	L	0	L
43	1	0	1	0	1	1	93	0	L	L	L	L	0
44	1	0	1	1	0	0	94	0	L	L	L	L	L
45	1	0	1	1	0	1	95	L	0	0	0	0	0
46	1	0	1	1	1	0	96	L	0	0	0	0	L
47	1	0	1	1	1	1	97	L	0	0	0	L	0
48	1	1	0	0	0	0	98	L	0	0	0	L	L
49	1	1	0	0	0	1	99	L	0	0	L	0	0
50	1	1	0	0	1	0	100	L	0	0	L	0	L

2.4.3 Enrolling of Flex5/R

Inim Electronics control panels allow the enrolling of peripherals in different ways, with a choice between automatic or manual procedures, depending on installer access to the system.

Automatic, from control panel in 'service' mode

Placing the control panel in 'maintenance' mode activates automatic enrolling of peripherals on the BUS at intervals of 10 seconds.

If the installer assigns addresses to peripherals connected to the BUS, at 10 second intervals, the control panel will enroll in the configuration the peripherals it finds.

Automatic, from keypad

Alternatively, it is also possible to start an automatic enrolling process by means of the following installer menu options:

Type in Code (Installer), PROGRAMMING Default settings, Auto enrolPeriph

Manual, 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.

Manual, via SmartLeague software application



Once the solution of the system to be designed [A] has been opened, in the right 'Design' tab [B], it is possible to select an icon of the type of peripheral to be configured and drag it to the relevant part of the tree structure on the left [C].

Alternatively, you can double-click on the device icon to add it to the configuration.

In the tree structure on the left, the number corresponding to the selected device type increases.



To remove a component from the tree structure, select it and press **CANC** on the computer keyboard.



Manual, from keypad

The enrollment of addressed peripherals is possible by enabling the menu options after reaching 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 .


3. Programming of Flex5/R

The programming of Flex5/R devices, as peripherals of the Inim Electronics control panel, can be carried out either via software or from a keypad.

3.1 Programming the expansion boards

Via software

By clicking on the 'Expansions' button on the menu on the left, the section on the right will show a list of the configured expansions.

Selecting one of the options will allow you to configure the parameters of the single peripheral by clicking on the  button.

Via keypad


Type in Code (Installer), PROGRAMMING Expansions, ChoosePeripheral

This section allows the programming of the various options of the selected expansion.



3.1.1 Expansion parameters

Individual expansion parameters

Parameter		Software section	Installer menu section
Description	Description string of the expansion (to be customized by the installer).	 Configured expansions, selected expansion	Expansions, ChoosePeripheral, "expansion"
Sound on output	This option that enables/disables the buzzer of the selected expansion when the relevant T1 terminal is activated as an output.		Expansions, ChoosePeripheral, "expansion", Options
Disable tamper protection	This option enables/disables tamper on the peripheral (enabled by default).		



4. General information

4.1 About this manual

Manual code: DCMIINE0FLEX5R

Revision: 101

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4.2 Manufacturer's details

Manufacturer: Inim Electronics S.r.l.

Production plant: Centobuchi, via Dei Lavoratori 10

63076 Monteprandone (AP), Italy

Tel.: +39 0735 705007

Fax: +39 0735 734912

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 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 Flex5/R 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.biz.

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.biz, getting access to Extended Access and then selecting "Certifications" or requested to the e-mail address info@inim.biz 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.biz, 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.





Evolving Security

Inim Electronics S.r.l.

Via dei Lavoratori 10, Loc. Centobuchi
63076 Monteprandone (AP) ITALY
Tel. +39 0735 705007 _ Fax +39 0735 704912

info@inim.biz _ www.inim.biz



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