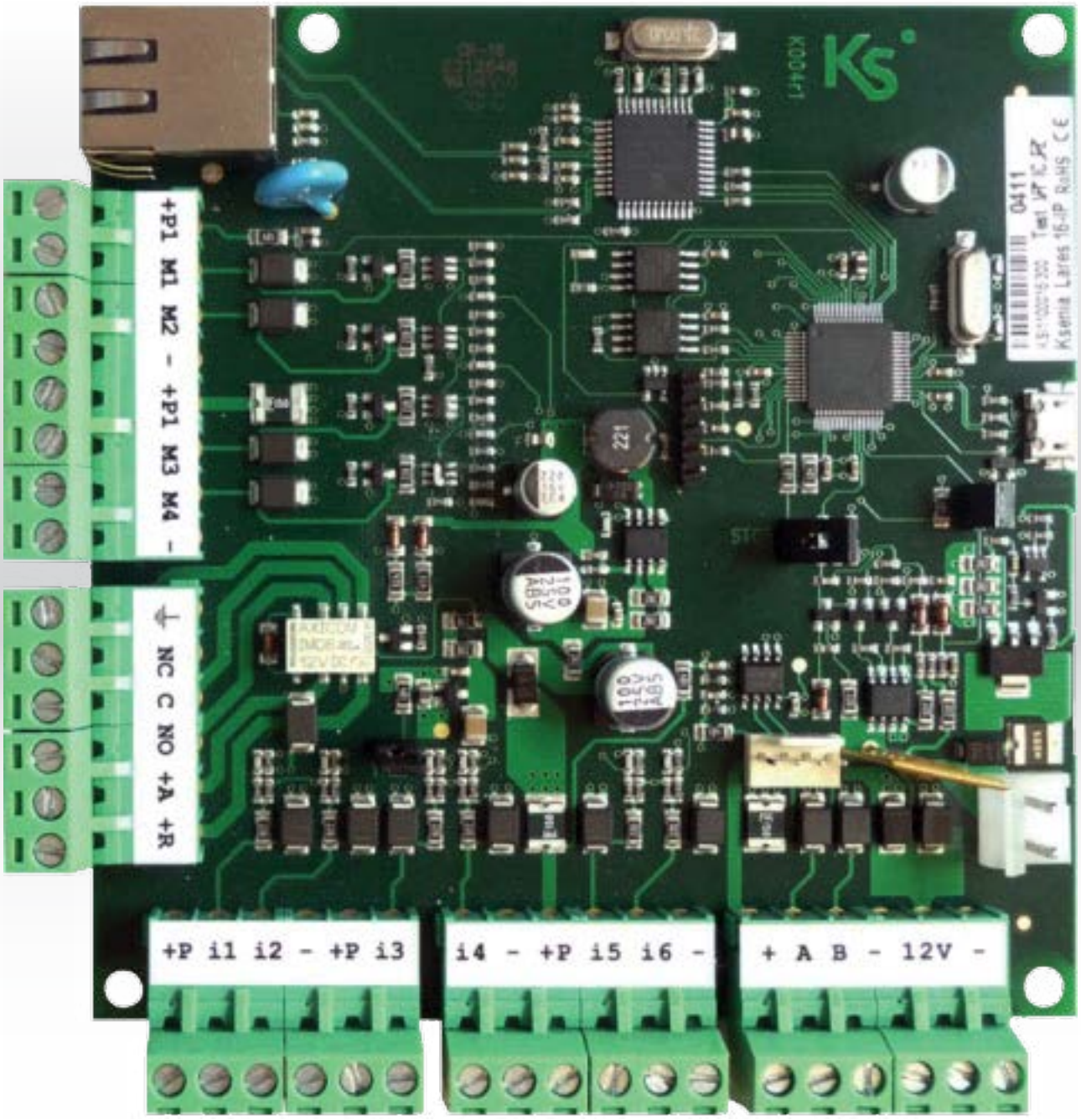
MANUALE DI INSTALLAZIONE - INSTALLATION MANUAL

lares

PIATTAFORME INTEGRATE - INTEGRATED PLATFORMS

KSI1000016.300 - KSI1100016.300 - KSI1000048.300 - KSI1100048.300 - KSI1100128.300



Ksenia
security innovation

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INTRODUCTION

lares is the new trade mark of Ksenia Security's professional burglar alarm systems. This is a somewhat reductive definition, in view of the enormous potential and flexibility of these systems that are able to encompass the other branches of security so as to manage the automation and the integration of buildings, TVCC, control of accesses and other applications.
The ***lares*** systems are available in three models and five different versions which are expandable from 16 to 128 inputs to cover all targets of the market, from real estate to large-building department stores. The modularity and versatility of the ***lares*** series enables the system, even by a large range of peripherals and the IP connection, to be adapted to any current requirement as well as to later expansions.
System expandability is implemented by the ***auxi*** devices that operate on the fast 4-wire KS-BUS. The ***lares*** systems can be programmed by a PC through IP (on the version with integrated Ethernet) and by direct uploading through the USB port. Additionally ***lares*** has various control functions (unit switch-on and -off, call lock, alarm reset), and several others.

SPECIFICATIONS FOR MODEL - TECHNICAL DATA

HARDWARE					
Control Panel	lares 16	lares 16-IP	lares 48	lares 48-IP	lares 128-IP
Power supply voltage	230 V~ -15/+10% 50 Hz 0,3A		230 V~ -15/+10% 50 Hz 0,5A		
Power Supply Battery Charger (Type A norm EN50131-6)	14,1V ± 1% 1,7A		14,1V ± 1% 3,5A		
Current consumption (max.)	60mA	100mA	60mA	100mA	100mA
Maximum current available for external devices	600 mA grade 2 100 mA grade 3		1400 mA grade 2 200 mA grade 3		
Max. output voltage ripple	120 mV				
Max. current for battery charging	600 mA		750 mA		
Maximum battery recharge time to 80%	10 h		24 h		
Deep discharge voltage protection	10 V				
Low battery threshold (restore)	11,5 V (13,1 V)				
Low voltage threshold	12 V				
Allocable batteries	7,2 Ah		18 Ah		
Maximum number of inputs	16		48		128
Built-in inputs (fixed + programmable)	6+4				
Maximum number of OC outputs + relays	16		48		128
Ethernet connectivity management	NO	YES	NO	YES	YES
"On-the-go" USB port	YES				
Power supply fault detection	YES				
Over voltage protection	YES (17,5 V)				
Combinations of Digital Key	More than 4 billions				
Alarm transmission system	ATS2 ***pontis*** - ATS4 ***gemino*** BUS				
Time for generation and transmission of alarm messages	3 sec.				
Time for detection and presentation failures	10 sec.				
Protection class	IP 3X				
Security grade	3				
Environmental class	II				
Isolation Class	I				
Overall dimensions (WxHxD)	255x295x80 mm		325x400x90 mm		
Weight (with battery)	2,3 Kg (4,5 Kg)		4,2 Kg (10 Kg)		
auxi expansion modules	4		24		40
ergo LCD keypads	8		12		20
imago outdoor siren on BUS	8		12		20
radius indoor siren on BUS	8		12		20
volo proximity reader	8		12		20
divide BUS isolator/repeater	8		12		20
GSM ***gemino*** communicator	YES				
PSTN ***pontis*** communicator	YES				
duo BUS wireless receiver	2				
Operating range	-10 / +55 °C				
Humidity (not condensed)	95 %				
Certifications	T 014 / 1th Edition 2003 + A1:2002 + A2:2003 + A3:2005 CE • EN50131-1 • EN50131-3 • EN50131-6 • EN50136-1-1				
Certifying Body	IMQ - SIstemi di Sicurezza				

SPECIFICATIONS FOR MODEL - TECHNICAL DATA

SOFTWARE					
Control Panel	lares 16	lares 16-IP	lares 48	lares 48-IP	lares 128-IP
Manageable partitions	8		12		20
Programmable switch-on modes	16		32		64
Timers	16	16	16	32	32
Daily scheduler	SI				
User codes	16		48		128
Transponder keys	64	64	64	128	128
Recorded events (logger)	1500				
Telephone numbers	20		50		100

DEVICES FEATURES

DEVICE	**auxi** expansion module	**ergo** LCD keypad	**imago** outdoor siren on BUS	**radius** indoor siren on BUS	**volo** proximity reader	**divide** BUS isolator/ repeater	**gemino** GSM communicator ATS4	**pontis** PSTN communicator ATS2	**duo** BUS wireless receiver	**opis** Supervised power supply station
IMQ SISTEMI DI SICUREZZA EN50131-1 • EN50131-3	✓	✓	✓	✗	✗	✓	✓*	✓*	✗	✗
CONSUMPTION	20mA P terminal and outputs excluded	15mA stand-by 400mA max	20mA stand-by 250mA max	20mA stand-by 250mA max	40mA	20mA	80mA stand-by 250mA max	50mA	50mA max	50mA

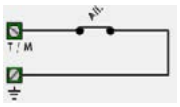
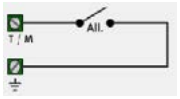
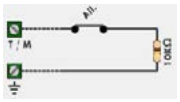
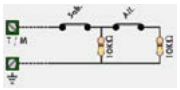
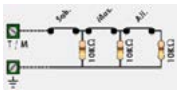
* In order to maintain the conformity with the listed norms at page 30, the GSM communicator ***gemino*** and PSTN communicator ***pontis*** have to be installed on metal cabinet. In case of installed ***pontis***, system will be certified grade 2. In order to guarantee a sufficient GSM signal coverage, it is recommended to implement an external antenna.

LOGICAL FEATURES

ZONE / INPUTS

Every board of the system carries 6 programmable inputs and 4 terminals which, upon installation, can be configured as inputs or as outputs (essentially we have up to 10 inputs on the system). Moreover, a specific connector is available for connecting the protections against opening and removal of the control panel from the wall. Depending on the model, the number of inputs can be extended up to a maximum of 128. Depending on the requirements, each input, both on the PC board of the Control Panel and on the auxiliary module, is programmable in five different types of balancing: NC (normally closed), NO (normally open), BAL (single balancing or line end EOL), DBAL (double balancing or double line end 2EOL), 3BAL (triple balancing or triple line end 3EOL).

The following table shows how the ***lares*** system interprets the resistance values for the different balancing configurations and their associable conditions.

Balancing	Scheme	Range 0	Range 1	Range 2	Range 3	Range 4
		0 - 1,8 kΩ	2,2 - 4,1 kΩ	4,2 - 6,8 kΩ	7,2 – 14 kΩ	∞ (open)
NC		Rest	Alarm			
NA		Alarm				Rest
BIL		Tamper			Rest	Alarm
DBIL		Tamper	Rest		Alarm	Tamper
3BIL		Tamper	Rest	Alarm	Mask*	Tamper

* The mask event it's managed as fault.

Direct connection of rolling shutter type or inertial (glass break) type sensors is possible.
lares manages the following responses in the system:

- 24h
- Immediate
- Entry delay
- Exit delay
- Entry path
- Exit timeout

In the case of the path zones, it is possible to customize the breach sequence and what would be the last zone[1].

Inputs can also be grouped in AND among them. Moreover, also in this case, the user can easily decide whether they are to be breached in sequence or not.

In order to maintain the conformity with the listed norms at page 30, the alarm zones have not to be balanced 'NC' or 'NA'

In case of alarm, arming the system will be possible only excluding these zones. In case of tamper / fault events the arming mode will never be possible.

[1] For more details please refer to Programming Manual, at the section of customizing of zones, at the topic named Entry Level.

PARTITIONS

Each input can be associated freely to a group (partition) in order to simplify its management. There are 8, 12 or 20 partitions available, depending on the model (see Table). For every partition, it is possible to program the entry, exit, warning and patrol times and to define a variety of switch-on and triggering methods.

OUTPUTS

The control panel PC board carries one supervised double-switching programmable 1A relay output and four 500mA OC outputs. Depending on the model, the number of outputs can be extended up to a maximum of 64. Whether the outputs are located on the control panel PC board or in the auxi module, each of them can be programmed according to the requirements: polarity (normally open or normally closed); operation (bi-stable or mono-stable); activation times (ON time and cycle time).
Outputs can be commanded in the following ways:

MODALITY	HOW TO SWITCH ON
Automatic	• Zone events (alarms, tamper, by-pass, mask or real time) • partition events (alarms, tamper, triggers, mask, bell, patrol, communication, entry time, advice, exit time, management e negligency) • Peripherals events (tamper or disapper) • Timer / scheduler • Networks loss/restore (power supply, Ethernet)/generic events
Manual[2]	• Keystroke on ***ergo*** keypad • Via webserver (keystroke on virtual keypad) • Codes / keys

For more details please refer to Programming Manual.

USB INTERFACE

All ***lares*** systems have an "On-the-go" capable of connecting directly to the PC or to a USB flash-memory key. The following table explains the differences.

PC	As device	It's a link between the PC and the system. Using ***basis*** SW you can configure the system, update vocal messages, the FW of the main board and the peripherals, read the real time of the zone and partitions.
USB Key	As host	Using this link you can update the system configuration (after the key being loaded via ***basis*** SW) or update vocal messages or FW (main and peripherals). Use the Micro USB adapter - KSI7501000.020

2 See also lares and home automations.

ETHERNET CONNECTIVITY - LAN NETWORK

The Ethernet interface is already integrated in the PC board of the ***lares 16-IP***, ***lares 48-IP*** and ***lares 128-IP*** versions: this solution allows managing the system easily via any internet connection from anywhere around the world.

ETHERNET	Network Link	It's a link between the PC and the system. Using ***basis*** SW you can configure the system, update vocal messages, the FW of the main board and the peripherals, read the real time of the zone and partitions.
ETHERNET	Network Link	Via web-server it's possible: • Display FW and SW versions, web-server and peripheral versions. • Read and/or modify the name of the host and other network settings (DHCP, IP address, SMTP parameters) • Dynamic DNS • Updating web-server pages • Read and/or modify date and time • Read event log and peripherals staus • Display and switch on/off outputs. • Display and arming/disarming of partiotions • Display and by-pass/unby-pass zones

System is protected by a three-level security mechanism: all remote operations require PIN insertion, data are encrypted before be sent on the network; last, remote access can be inhibited or limited by the user (i.e. can be limited to real time or event logger reading only).

VOCAL MESSAGES

Up to 400 distinct vocal messages can be recorded in the system, with almost 15 minutes recording time. They will warn the user in case of alarm or fault (with a specific message for every zone) or guide the user in the various functions of the system. The vocal messages are managed by ***gemino*** (if sent via GSM) or by ***pontis*** (if signalled via PSTN), or are reproduced locally on the ***ergo*** keypads.
They can be recorded in 3 different ways:
• Through the microphone of your PC
• By importing wave files
• By means of two text-to-speech (TTS) vocal synthesis programs, both available through ***basis***[3].

ALARM TRANSMISSION SYSTEM

DEVICE	SMS	VOCAL MESSAGES	E-MAIL	SIA IP (DC-09)	CONTACT-ID
lares IP ETHERNET	✗	✗	✓	✓	✗
gemino BUS GSM / GPRS	✓	✓	✗	✓	✓
pontis PSTN	✗	✓	✗	✗	✓

In order to maintain the GRADE 3, the panel have to be connected to the central monitoring station exclusively through GPRS or ETHERNET nets with SIA DC-09 communication protocol, using the ***gemino*** GSM communicator.

In order to maintain the GRADE 2, the panel have to be connected to the central monitoring station through vocal synthesis communication, using ***pontis*** PSTN communicator (ATS2). Each event have to be associated with a transmission.

REMOTE CONTROL OF THE SYSTEM

The system can easily be remotely managed through the following available options, namely by:
• Using the integrated web-server (see Ethernet connectivity - LAN network)
• Just calling the system via GSM or PSTN through the guided menu
• Sending an SMS (***gemino*** BUS expansion board is required)

[3] One engine is offered free of charge and is of normal quality; the second is of excellent quality (LOQUENDO TTS is a registered trademark of LOQUENDO S.p.A.) licensed under a one-off payment. With the latter the installer can program the ***lares*** series systems, the ***gemino*** series communicators, and other future devices.

MONITORING THE POWER SUPPLY

lares monitors both the external power supply voltage and the battery. It periodically checks the efficiency status of the battery, and will issue a warning in the case of problems. Moreover, in case of prolonged absence of power supply, the system turns the battery off to prevent deep discharges. This is not merely a protective measure: it is the system itself that disconnects the battery and, before switching itself off, ***lares*** performs all of the necessary checks, stores the switch-off date and time for any subsequent checks and then switches the system off without causing any faults. In this case the sirens will not sound, thus avoiding undue trouble.

ADDRESSING THE DEVICES ON THE KS-BUS

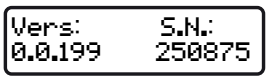
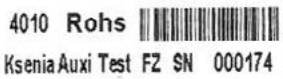
This is a fundamental step when starting up our system. Ksenia introduces an innovative concept for addressing its devices: all of them come from the factory already preset with a serial number composed of 6 numeric digits. The code distinguishes every single device univocally. The serial number can be read both through the ***basis*** software and the ***ergo*** keypad, as follows.

METHOD	READING	SUBSTITUTION
basis software	In the display page of the real-time status	In the main display page of the peripheral device in question, under item 'Serial number'
ergo keypad	'Peripherals' Menu > Assign, Program	

<u>The replacement is not allowed.</u>

This new approach for addressing peripherals has many advantages:
- Protection from substitution (each peripheral being different from any other and then easily distinguishable);
- Impossibility in creating conflicts (same peripheral address);
- Reduction of the possibility of making mistakes in large systems.

If the system has only one peripheral per type, it is very simple: it is advisable to leave it unassigned, then from the keyboard its assignment will be univocal.
The only care to be taken when configuring and programming the devices is the one of correctly associating the serial number of the device to its actual position in the system, especially when there are more peripherals of the same type. For example, if you decide that keypad1 with serial number 000012 will be used in the lounge and keypad2 with serial number 000020 is to be used in the garage, then they will have to be installed physically in the lounge and in the garage as planned before; otherwise the two devices will operate in reverse order.
In the following table some examples about where and how to find the serial number are shown.

DEVICE	LOCATION OF THE SERIAL NUMBER	EXAMPLE
ergo[4]	Access the installer menu and move to the last item, 'Version'	
auxi imago BUS pontis volo divide radius BUS opis	Label adhesive attached, worded SN XXXXXX	
gemino BUS	On the GSM radio module, it corresponds to the last 6 digits of IMEI (in this case 272130)	

[4] In order to program and use the keyboard correctly, it is necessary to know the USER and INSTALLER codes from the factory that have to be changed later on: USER: 147258 • INSTALLER: 123456

lares AND HOME AUTOMATIONS

The ***lares*** control panel is unique in this concern, too. Its own platform integrates itself with extreme ease in any Home Integration & Automation logics. It takes an absolutely leading role, as it is perfectly capable of managing autonomously the domotic applications you always dreamt of for your house – without any help from a PC or the use of any complicated programs.

A list of home automation appliances (regardless of burglar systems) follow:
- Lighting
- Heating / conditioning systems
- Irrigation systems
- Automations and control of loads
- Fire detection and extinguishing system
- Audio / video entertainment
- Audio / video surveillance
- Accesses control

The I/O modules that can be used for programming and managing the various loads are the same auxi modules used for expanding the control zones or the programmable inputs of ***gemino*** communicator and, thanks to their miniaturisation level and the brand-new self-learning system with serial code, they can easily be hidden in any pre-existing small wall-mounting enclosures (i.e. junction boxes or switch/socket boxes).
Management of the domotic system is tightly related to the concept of scenario (macro function): every time an event occurs on the system (which can be a button stroke, entering of a code upon the keypad, the breach of a zone, the combination of more events that can be tailored, etc.), the system affords the possibility of programming through the following parameters the desired macro function:
- Turning partitions on / off
- Activating or deactivating outputs (up to 8 for each macro function)
- Reproducing a vocal message
- Activating the vocal communicator
- Sending an E-mail
- Sending an SMS
- Activating a timer

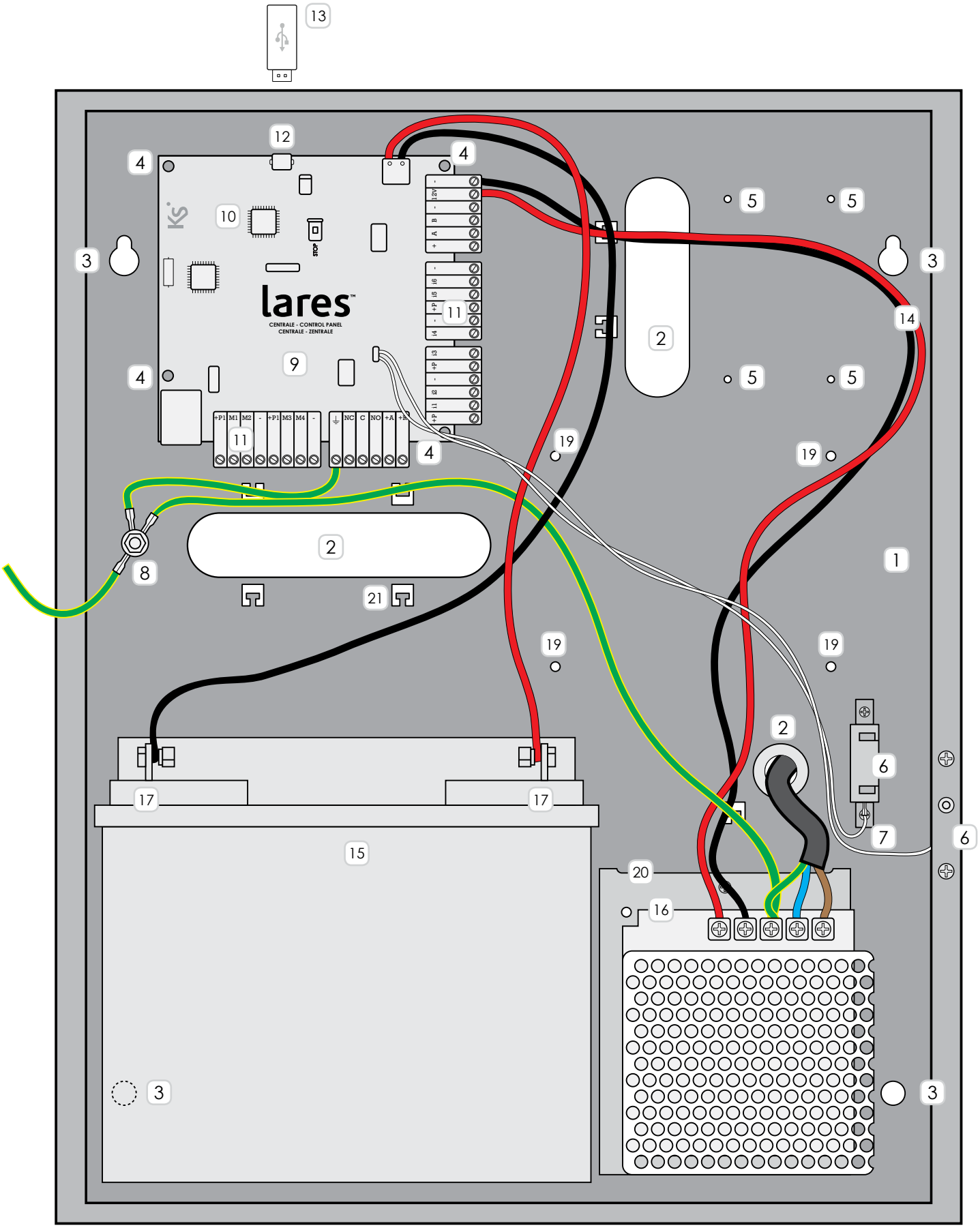
The system can be managed very simply through the ergo keypad: up to 10 macro functions can be associated to each keyboard, every macro related to the stroke of a numeric key, or after the entering of a valid user-code. Another important peculiarity of the ***lares*** systems in home-automation environments is the storage into memory of the repeated macro functions: for example, the system will automatically propose the macro function that you activate most frequently from a keyboard, allowing you, in each case, to use the circular scroll in order to see the other macro functions that can be activated[5].
Tutto ciò allo scopo di fare interagire l'utente con il sistema per mezzo del numero minimo di pressione di tasti.
All of this to allow the user to interact with interfaces by the least number of key strokes. You just need to enter your PIN, on the keyboard, through the tag proxy or your NFC mobile phone into the ***ergo*** keyboard.

FIRMWARE UPDATING

Both the firmware of the control panel board and the firmware of all peripherals connected via the KS-BUS can be updated easily in a few seconds. It is not necessary to make any special connection, or to insert jumpers or to switch off the system or the peripherals: the firmware can be uploaded directly to the control panel through its USB port (either from PC or uploaded from a USB key), or remotely via Ethernet communication (if enabled by the user).
The update occurs automatically and is absolutely safe, all Ksenia Security devices have a unique technology for updating the firmware: the dual-firmware-mode. A copy of the new firmware is saved in the control panel that must be updated. Once copying (which can be done during normal working of the system) is completed, the control panel checks the new firmware by means of a CRC sequence (cyclic redundancy check). If the operation is found to be correct, the system will commence using the new firmware; if not, it will keep using the old code; this guarantees the maximum of reliability even in case of breaking of transmission.
Essentially, all Ksenia Security systems are back-compliant: new features and functions that will become available in future will be integrated to pre-existing systems without any need to modify or replace the existing peripherals.

[5] Please refer to the User Guide.

hereafter, shows the main parts composing the ***lares*** system. The picture also shows the power supply connections in detail: pay attention to the earth connection. The two holes on the case bottom provide an wide passage of cables for wiring the peripheral devices also in the case of quite large systems.



1. Metal bottom
2. Large holes for passing cables
3. Bottom securing holes
4. System's board brackets
5. ***auxi*** PC board brackets
6. Anti-tamper micro-switch
7. Micro-switch cable + connector
8. Earth connections on threaded pin and nut
9. Control panel board
10. Control panel micro-controller
11. Interconnection terminals
12. Programming USB connector
13. USB key (optional)
14. Power supply cable
15. 12V battery
16. Switching power supply unit
17. Battery terminals
18. Power supply unit terminals
19. ***gemino*** PC board brackets
20. Support for power supply unit
21. Holes for cables fixing

WALL MOUNTING INSTRUCTIONS

In order to correctly install the metal cabinet and the components inside it, please follow the instructions here below:

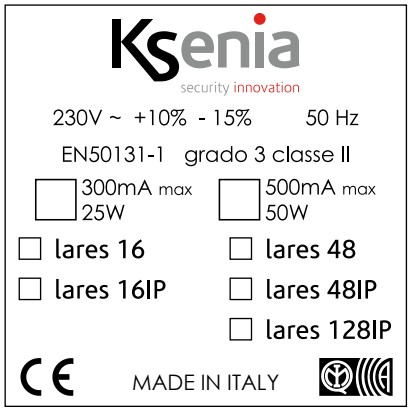
1. Fix the metal cabinet to the wall using Ø 0.32 inch screws (options)

In order to maintain the conformity with the listed norms at page 30, install a screw in correspondence to the tamper

2. Extract the support for power supply unit. (20)
3. Fix the power supply unit to its support using the provided M3 screws.
4. Replace the support.
5. Wire the cables as shown in picture.
6. Ensure the cables to the fixing holes (21).

MOUNTING NOTES

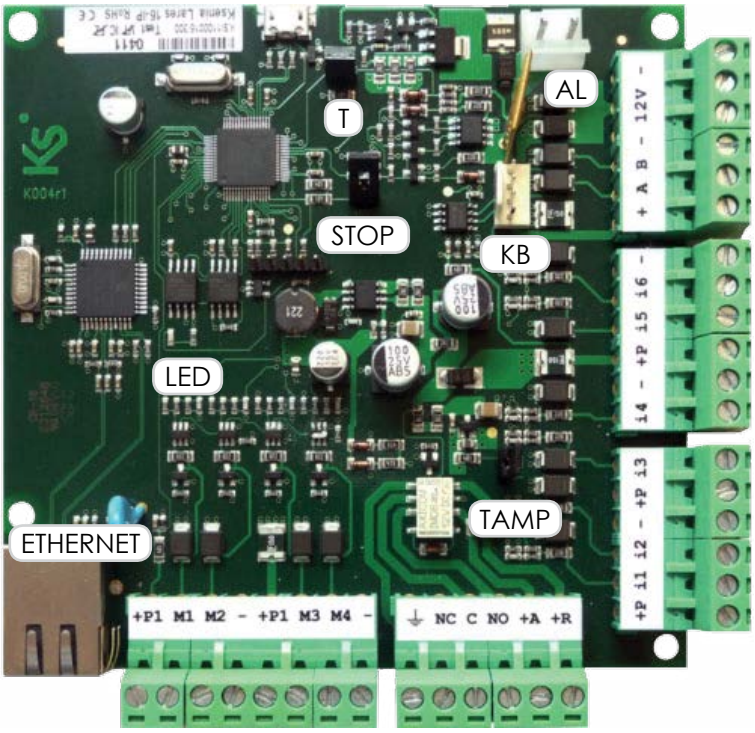
- Arrange outside the Panel an isolating device (es. Circuit Breaker Device 16A Curve C).
- The two power supplies have respectively two internal fuses (25W - T2AL / 50W - F3.15AL).
  In case should fail, its replacement requires the opening of the power supply and must therefore be carried out by authorized personnel.
- Wire the earth connection directly on the power supply unit.
- The power supply conductors must be 0,6 inch.² minimum section.



- Depending of the installed power supply unit and Control Panel, check the relative box in the label, outside the metal cabinet.
- Power supply unit RS25-15
  Ksenia Code KSI7101217.000
  ☑ 300mA max 25W
- Power supply unit RS50-15
  Codice Ksenia KSI7101230.000
  ☑ 500mA max 50W

CONNECTIONS

The *lares* control panel is governed by a powerful 32-bit micro-controller that controls all of its functions. Figure 2 below shows – in addition to an overall view of the PC board and the use of the various jumpers – the layout of the system's terminals and provides a short description of their use.



AL - 12V battery connector

TAMP, T - Tamper
Open: Tamper reveal ON
Closed: Tamper reveal OFF

STOP - Factory Data
1. Turn the control panel off
2. Remove the STOP jumper
3. Turn the system on
   The green LED remains steady lit until the STOP jumper is reintroduced, and the system remains on stand-by.
4. As soon as the jumper is inserted, the control panel restores the factory data, and normal operation commences

LED - micro-controller operation LED
It blinks during normal operation

KB - KS-BUS auxiliary connector
[+] [A] [B] [-]

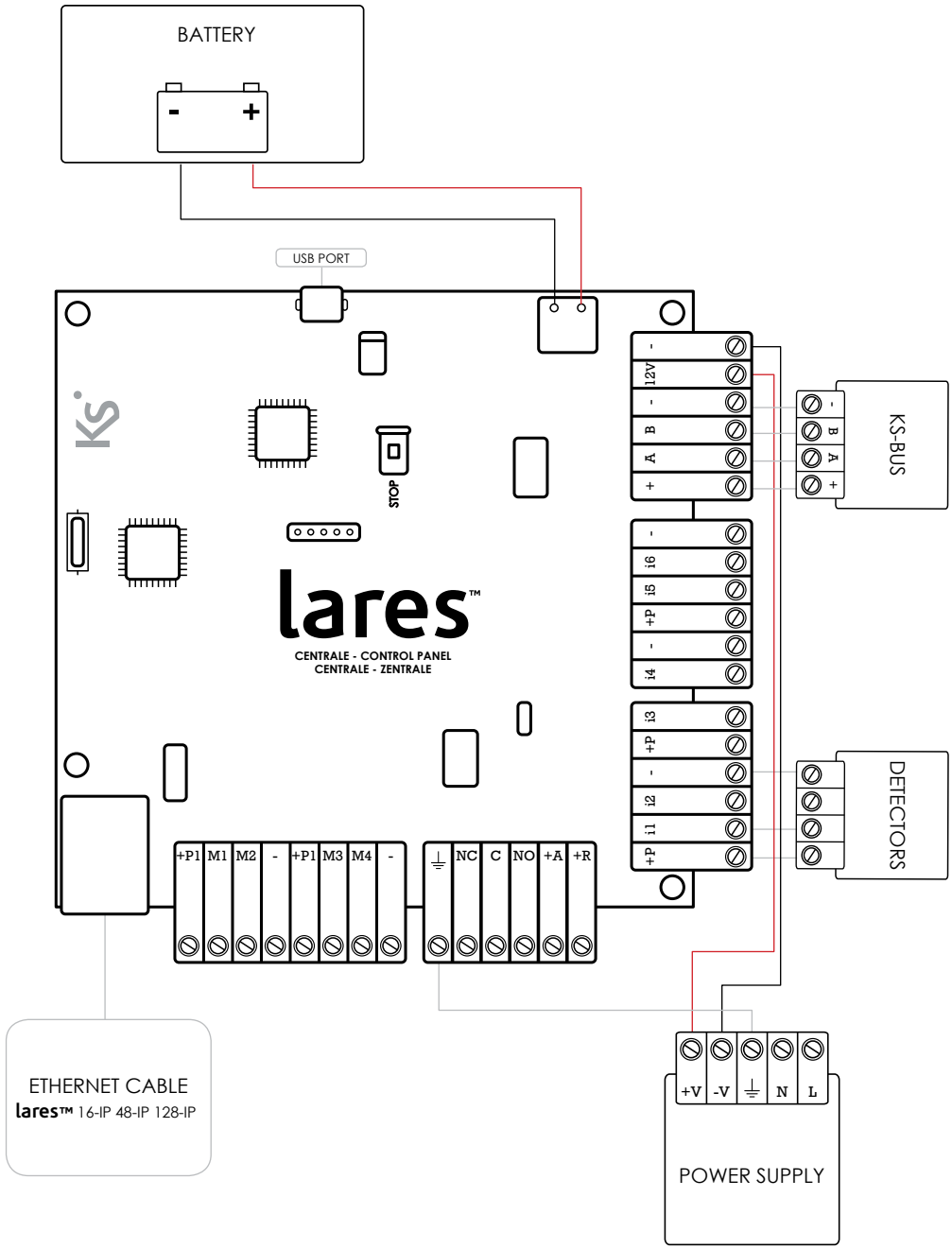
ETHERNET - Ethernet/IP connector
It is used for the IP connections (web-server, local net, Internet)

CONNECTION TERMINALS

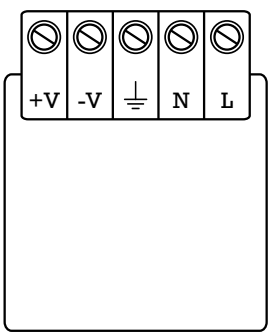
TERMINAL	TYPO	DESCRIPTION
12V	Power supply	Power supply to the system. Connect the 14.2V voltage of the power supply unit.
+P • +P1		It delivers a positive auxiliary power supply to the devices connected to the control panel. This is a 13.8V 1A (max supply if the power supply unit is 1.7A, or 2.3A (max.) if the power supply unit is 3A.
-		Negative power supply
⏚	Earth	The power supply unit and of the metallic enclosure earth protection must be connected to this terminal
i1 • i6	Input	System zones or input terminals
M1 • M4	Programmable I/O	Input/Output terminals, programmable via software, Open Collector type, 500 mA (max.)
NC	1st switchover relay	Normally closed contact, 1A (max.)
C		Common contact, 1A (max.)
NO		Normally open, 1A (max.)
+A	2nd switchover relay	Alarm positive present 1A (max.) – supervised
+R		Rest positive missing 1A (max.)
+	KS-BUS serial communication	BUS power supply positive
A		TX signal
B		RX signal
-		Negative power supply

TYPICAL CONNECTION DIAGRAM

A basic connection diagram is shown in figure. To assist the installer, a label on the back of the metal cover of every lares system reports the necessary connections for correct operation, as shown below:



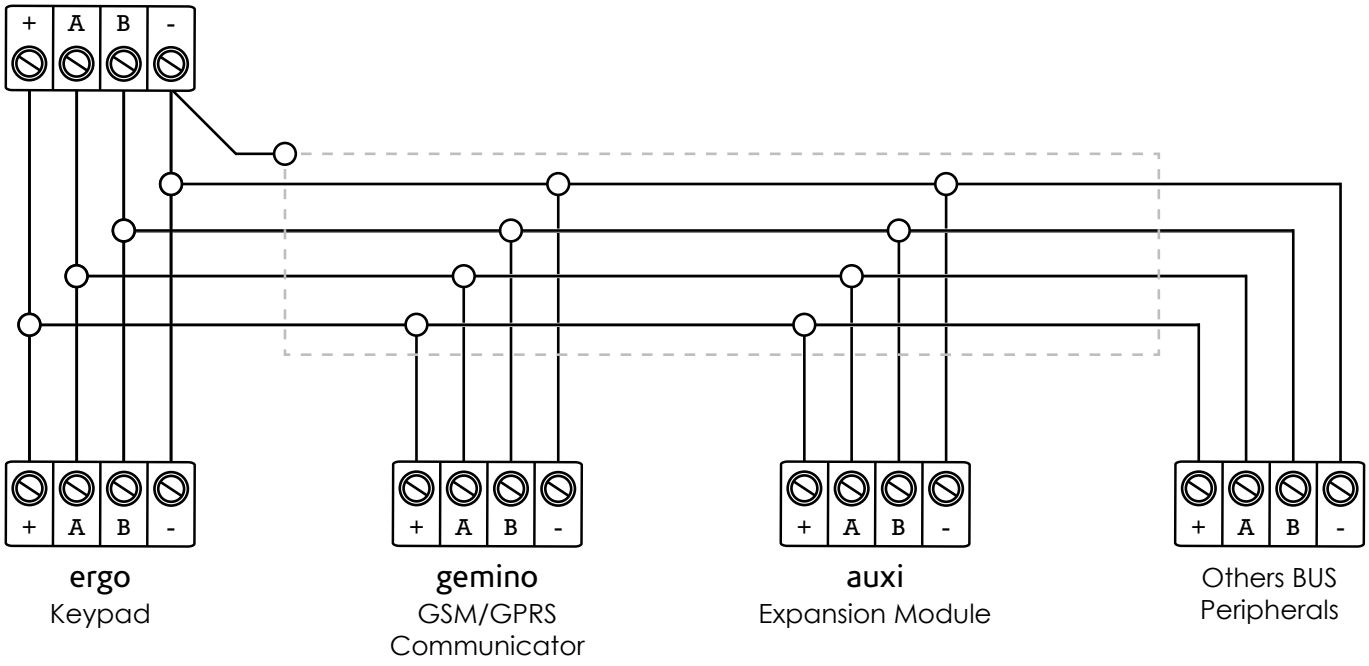
DESCRIPTION OF POWER SUPPLY CONNECTION



TERMINAL	DESCRIPTION
+V	Power output 14,2V
-V	
⏚	Protection ground
N	Power Supply Voltage 220Vac
L	

KS-BUS CONNECTION DIAGRAM (RS485)

Peripheral units of the Ksenia system are connected through the fast KS-BUS. It is recommended not to exceed, for each wiring branch (e.g. control panel - device), the maximum length of 500 m (1400 feet), and the complete wiring should not be longer than 1000 m (2800 feet). Always use a screened cable with one end of the screen connected to the control panel's ground[6] and the other end free. Figure below is an example.



You should always take care to connect the screen properly, as indicated above, also for connections of other devices that don't communicate with the KS-BUS, especially in the presence of very long wiring.

MAINTENANCE

To perform the periodic maintenance of devices please follow the instructions here below:

- Remove the dust eventually deposited on metal cabinet using a damp cloth without any solvent.
- Check the connections and conductors status.
- Check for no external bodies inside of the Control Panel

[6] Not the protection ground.

*Installation of these systems must be carried out strictly in accordance with the instructions described in this manual, and in compliance with the local laws and bylaws in force.. **lares** series have been designed and made with the highest standards of quality and performance adopted by Ksenia Security. Is recommended that the installed system should be completely tested at least once a month. Test procedures depends on the system configuration. Ask to the installer for the procedures to be followed. Ksenia Security srl shall not be responsible for damage arising from improper installation or maintenance by unauthorized personnel. The content of this guide can change without prior notice from KSENIA SECURITY.*

CERTIFICATIONS

EN50131-3 • EN50131-6 • EN50136-1-1

CERTIFYING BODY: **IMQ - Sistemi di Sicurezza**

GRADE 3 • CLASS II

IMQ
Sistemi di Sicurezza

Information for users: Disposal (RAEE Directive)

Warning! Do not use an ordinary dustbin to dispose of this equipment.
Used electrical and electronic equipment must be treated separately, in accordance with the relative legislation which requires the proper treatment, recovery and recycling of used electrical and electronic equipment.
Following the implementation of directives in member states, private households within the EU may return their used electrical and electronic equipment to designated collection facilities free of charge. Local retailers may also accept used products free of charge if a similar product is purchased from them.*
If used electrical or electronic equipment has batteries or accumulators, these must be disposed of separately according to local provisions.
Correct disposal of this product guarantees it undergoes the necessary treatment, recovery and recycling. This prevents any potential negative effects on both the environment and public health which may arise through the inappropriate handling of waste.

** Please contact your local authority for further details.*

ENVIROMENTAL CARE

lares™ is designed and manufactured with the following features to reduce its environmental impact:

1. Halogen-free laminates and lead-free PCBA
2. Low current consumption
3. Packaging made mostly of recycled fibres and materials obtained from renewable sources

Ksenia
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