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YOUR **PROTECTION** AND **COMFORT**,
DESIGNING AND **MANUFACTURING**
PROFESSIONAL PRODUCTS & SERVICES.

**intro - Door Controller
Installation and Configuration
Manual**



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Overview

intro module (code KSI2800000.300) is a BUS peripheral that was designed to realize an effective integration process between Security and Access Control functions of lares 4.0 platform. Protecting residential structures access, buildings and/or restricted areas of them, by unauthorized persons is its main purpose.

intro module, completely developed, from design to final production, by Ksenia in Italy, is a BUS peripheral connected to the lares 4.0 control panel via KS-BUS and it represents the physical core of the Access Control system designed by Ksenia.

Each single **intro** module allows you to wire up and manage a complete gate structure with:

- door with a third-party electronic lock;
- magnetic contact (external or internal if provided inside the lock) to control the opening/closing of the door;
- two devices(*) with RFID reader (volo, volo-in readers or ergo-X keypad) placed near the door, necessary to authenticate authorized users;
- RTE (Request To Exit) button installed inside the restricted area to unlock it;
- a preconfigured output for optical (flashing lamp) or acoustic (buzzer) for DOTL (Door Open Too Long) and FD (Forced Door) alarms.

intro module is equipped with:

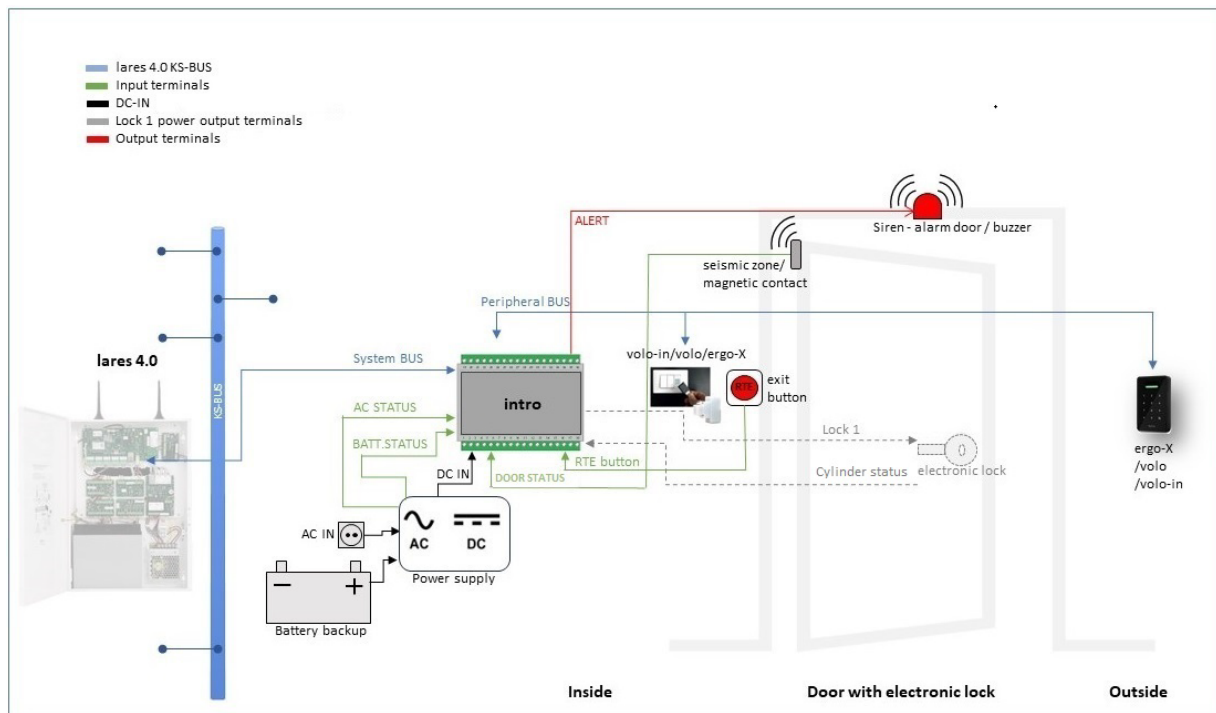
- two BUS, one for connecting lares 4.0 KS-BUS and one for connecting two peripherals(*) chosen between volo, volo-in or ergo-X keypad;
- one output to control the lock with 30Vdc -8A relay;
- one output for programmable function with 30Vdc -8A relay;
- 4 more outputs at 30Vdc -1A (two of which for programmable function), out of 6 total;
- one input to monitor the BOLT physical status;
- one input for connecting the magnetic contact of the door;
- one input for connecting the RTE (Request To Exit) button;
- two inputs to monitor the presence or absence of mains power and battery charge(**);
- 2 more programmable inputs with programmable balancing, out of 7 total.

intro module can be remotely configured via the Ksenia SecureWeb cloud and uses a new logic programming to facilitate the configuration work of specialized personnel in the most effective way.

() The connection of other peripherals, in addition to those indicated, is not recommended.*

*(**) If the power supply provides this information.*

Architecture solution



Technical data

- 1 door managed
- 2 BUS interfaces:
 - System BUS: 3 wires (A, B, -) link to lares 4.0 (NO power from KS-BUS)
 - Peripherals BUS: 4 wires (+, A, B, -) link to two local peripherals (volo, volo-in or ergo-X) supporting the access control function
- Power supply: 11...28 Vdc (from external power supply) (power supply on [+] to BUS Peripheral: +11...14Vdc max 0,5A)
- Consumption: < 300 mA
- Memory / Data storage: 4Mbyte
- 6 outputs (see note*) characterized as follow:
 - 1 preconfigured power relay, maximum rating 30Vdc 8A, to control the lock door
 - 1 power relay, maximum rating 30Vdc 8A, for programmable function
 - 1 preconfigured relay for Gate status, maximum rating 30Vdc - 1A
 - 1 preconfigured relay for Alert, maximum rating 30Vdc - 1A
 - 2 relays, maximum rating 30Vdc - 1A, for programmable function
- 7 inputs: 5 preconfigured inputs and 2 inputs (NC/NO or Balanced) 5V - 20mA
- Tamper protection against opening
- LED status indicator: RGB LED
- Operating temperature: -10... +55 °C (For Indoor Use Only)
- Protection class: IP30
- Dimensions: 105x115x58mm (LxWxH) (6 DIN modules including field connectors)
- Weight: 170 g (PCB including field connectors)
- Mounting: DIN rail mounting or inside a suitable metal or plastic cabinet (it is the plastic cabinet recommended by Ksenia code KSI2800001.300)



Note: (*) Resistive load. In case of inductive load, if not present, please add an external free-wheeling diode in order to preserve the contact life.

Quantity data

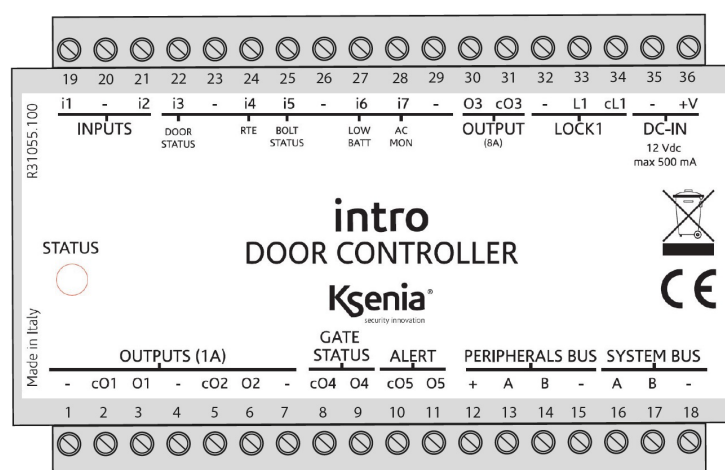
lares 4.0 models	wls 96	16	40	40 wls	140 wls	644 wls
Maximum number of intro modules	4	4	8	8	12 (20*)	16 (30*)

* Extended number is available under license, contact our sales team for information.

Technical data, appearance, functionality and other product characteristics may change without notice.

Description of the product

Labels on plastic box and terminals

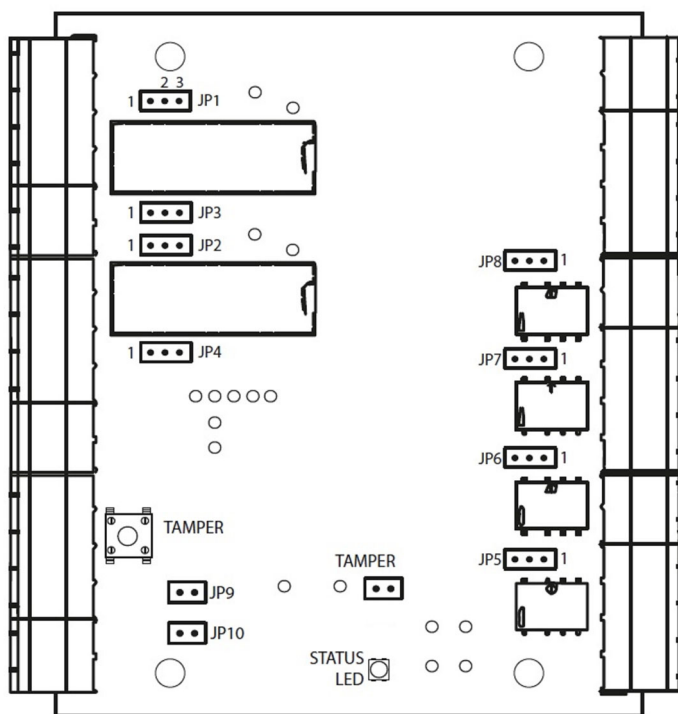


No.	Labels	Function	Description
36	+V		DC-IN: positive pole of external power supply source
35	-		DC-IN: negative pole of external power supply source
34	cL1		LOCK#1: Common pin of power relay where to connect external lock power supply (30Vdc max) in the case JP1 is in position 1-2 (factory default)
33	L1		LOCK#1: Output power from contact of power relay to lock#1
32	-		Ground terminal
31	cO3		Output#3: common contact of output #3 (30Vdc - 8A max)
30	O3		Output#3: NC or NO (factory setting) dry contact of output #3 (depending on jumper settings)
29	-		Ground terminal

28	i7	AC MONITOR	i7: input #7(*) Closed to ground (-) = OK, Open = KO
27	i6	LOW BATTERY	i6: input #6(*) Closed to ground (-) = KO, Open = OK
26	-		Ground terminal
25	i5	BOLT STATUS	i5: input #5
24	i4	RTE	i4: input #4 Normally Open Contact, active when closed to ground terminal (-)
23	-		Ground terminal
22	i3	DOOR STATUS	i3: input #3
21	i2		i2: input #2
20	-		Ground terminal
19	i1		i1: input #1
18	-	SYSTEM BUS	Ground terminal reference signal of KS-BUS from lares 4.0 panel
17	B	SYSTEM BUS	B-wire of KS-BUS cable from lares 4.0 panel
16	A	SYSTEM BUS	A-wire of KS-BUS cable from lares 4.0 panel
15	-	PERIPHERAL BUS	Ground terminal reference signal of PERIPHERAL BUS
14	B	PERIPHERAL BUS	B-wire of PERIPHERAL BUS cable to local controlled peripherals
13	A	PERIPHERAL BUS	A-wire of PERIPHERAL BUS cable to local controlled peripherals
12	+	PERIPHERAL BUS	Positive power supply of PERIPHERALS BUS
11	O5	ALERT	Output#5: NC or NO (factory setting) dry contact of output #5 (depending on jumper settings)
10	cO5		Output#5: common contact of output #5 (30Vdc - 1A max)
9	O4	GATE STATUS	Output#4: NC or NO (factory setting) dry contact of output #4 (depending on jumper settings) It automatically turns ON when the gate is disabled
8	cO4		Output#4: common contact of output #4 (30Vdc - 1A max)
7	-		Ground terminal
6	O2		Output#2: NC or NO (factory setting) dry contact of output #2 (depending on jumper settings)
5	cO2		Output#2: common contact of output #2 (30Vdc - 1A max)
4	-		Ground terminal
3	O1		Output#1: NC or NO (factory setting) dry contact of output #1 (depending on jumper settings)
2	cO1		Output#1: common contact of output #1 (30Vdc - 1A max)
1	-		Ground terminal

(*) LOW BATTERY and AC MONITOR inputs work correctly with power supply provided by Ksenia.

Jumper settings



Jumper	Setting	Description	Setting	Description
JP1	1-2*	LOCK#1 - Lock power supply input from external source through pin cL1	2-3	LOCK#1 - Lock power input from +V power supply input
JP3	1-2*	LOCK#1 - NO contact	2-3	LOCK#1 - NC contact
JP2	1-2*	Output#3 - output#3 power supply input from external source through pin cO3	2-3	Output#3 - output #3 power input from +V power supply input
JP4	1-2*	Output#3 - NO contact	2-3	Output#3 - NC contact
JP5	1-2*	Output#1 - NO contact	2-3	Output#1 - NC contact
JP6	1-2*	Output#2 - NO contact	2-3	Output#2 - NC contact
JP7	1-2*	Output#4 - GATE STATUS - NO contact	2-3	Output#4 - GATE STATUS - NC contact
JP8	1-2*	Output#5 - ALERT - NO contact	2-3	Output#5 - ALERT - NC contact
JP9	Open*	input#2 - Std input	Closed	Reserved for future use
JP10	Open*	input#1 - Std input	Closed	Reserved for future use
TAMPER	Open*	Trouble	Closed	Idle

Note: (*) Factory setting.

Status LED



RGB LED - Color	Signaling description
Steady Red	DOTL (Door open too long) or FD (Forced Door) alarm
Blinking Red	Inactive Gate (disabled)
Steady Green	Door is opening
Blinking Green	Active Gate (enabled)

External power supply description

- KIT Ksenia code KSI7101260.000: UPS kit 13.8V/60W, , for intro prewired on terminal blocks and complete with fuse holder.
- KIT Ksenia code KSI7102460.000: UPS kit 27.6V/60W for intro prewired on terminal blocks and complete with fuse holder.

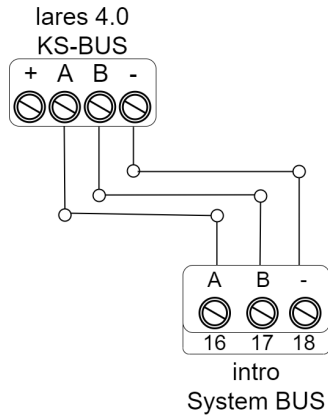
Installation

Mounting options

1. on a DIN bar inside a suitable box for installation;
2. Ksenia Kit code KSI2800001.300: intro with white plastic cabinet with front opening and screw closure and, depending on the type of lock, select between the 13.8V UPS kit (KSI7101260.000) or the 27.6V UPS kit (KSI7102460.000).

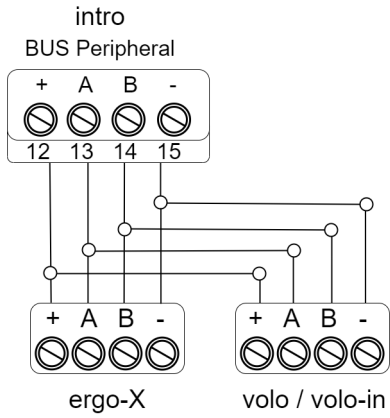
Wiring the system

Wiring intro SYSTEM BUS to lares 4.0 KS-BUS



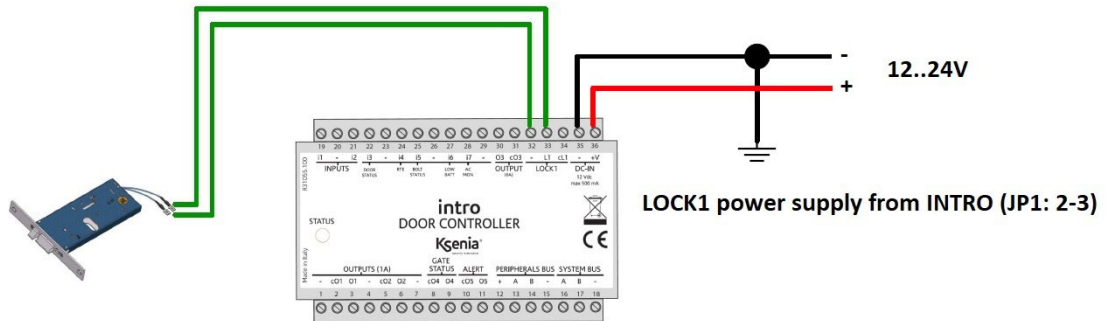
Note: DO NOT connect [+] terminal of lares 4.0 KS-BUS

Wiring intro PERIPHERALS BUS with ergo-X/volo/volo-in devices

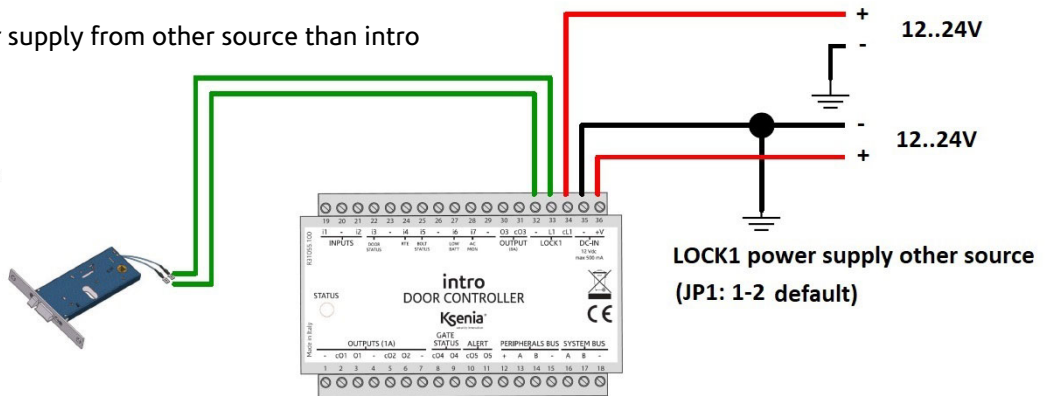


Wiring LOCK1 output

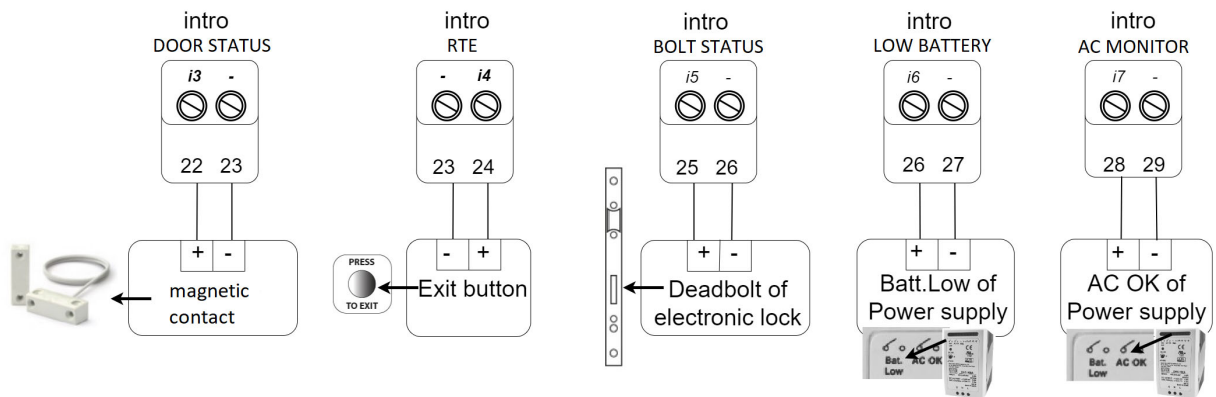
1st option:
Lock power supply directly from intro



2nd option:
Lock power supply from other source than intro



Wiring input terminals



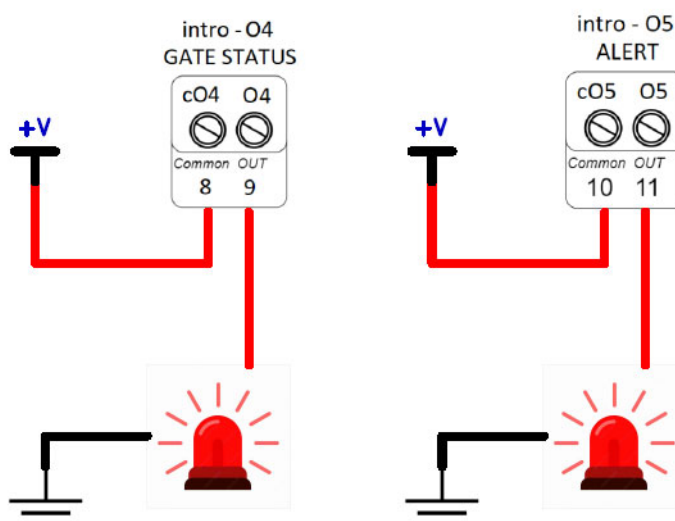
The **intro** module provides 7 inputs, 5 of which are programmed with functions already defined as summarized in the following table:

Input label	Function	Description
i3	DOOR STATUS	To be connected to an external magnetic contact (or, if present, internal to the electronic lock) it is necessary to detect the status of the door (Open/Closed).
i4	RTE	To be connected to an RTE emergency button, inside the restricted area, it is used to open the door (Pressed / Not Pressed).
i5	BOLT STATUS	If provided by the electronic lock, must be connected to the bolt of the lock to detect: Open = Bolt unlocked without multiple locking points Closed = Bolt locked with multiple locking points
i6	LOW BATTERY	To be connected to the "Batt. Low" output of the external power supply: - Normal = normal battery voltage - Low = battery voltage lower than 11V (if 12V power supply) or lower than 21V (if 24V power supply). Valid only when the main power supply is missing. NOTE: If the battery is not connected, its status is "Normal".
i7	AC MONITOR	To be connected to the "AC OK" output of the external power supply: Present = mains power supply present Absent = mains power supply not present



NOTE: i1 and i2 terminals are inputs NO/NC or balanced, freely programmable.

Wiring outputs terminals



The **intro** module provides 6 outputs, 2 of which are programmed with functions already defined as summarized in the following table:

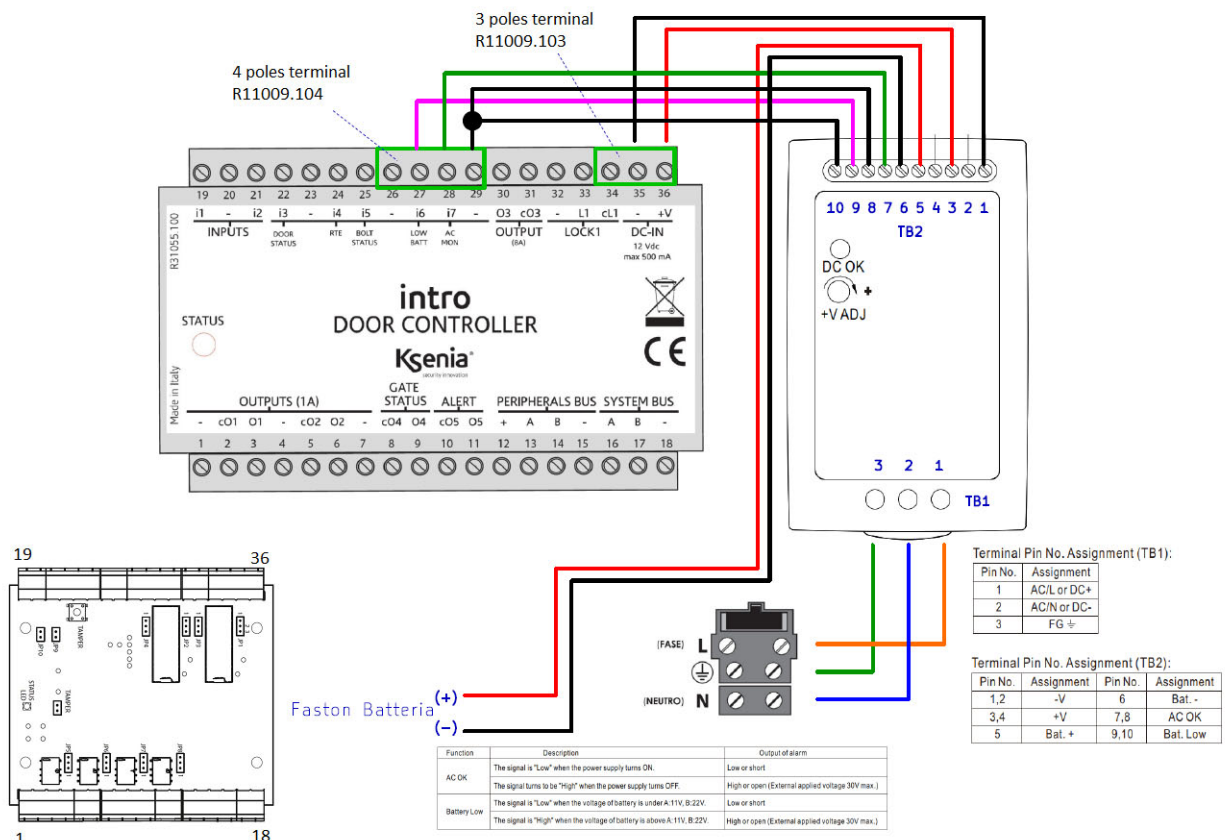
Output label	Function	Description
O4	GATE STATUS	Connected to a lamp (for example) it is automatically activated when the gate is disabled; jumper 7 - default NO.
O5	ALERT	To be connected to a gate alarm lamp (for example) to detect DOTL or FD alarms; jumper 8 - default NO.



NOTE: O1-O2 and O3 terminals are outputs NO/NC (default NO, (depending on jumper settings) and freely programmable.

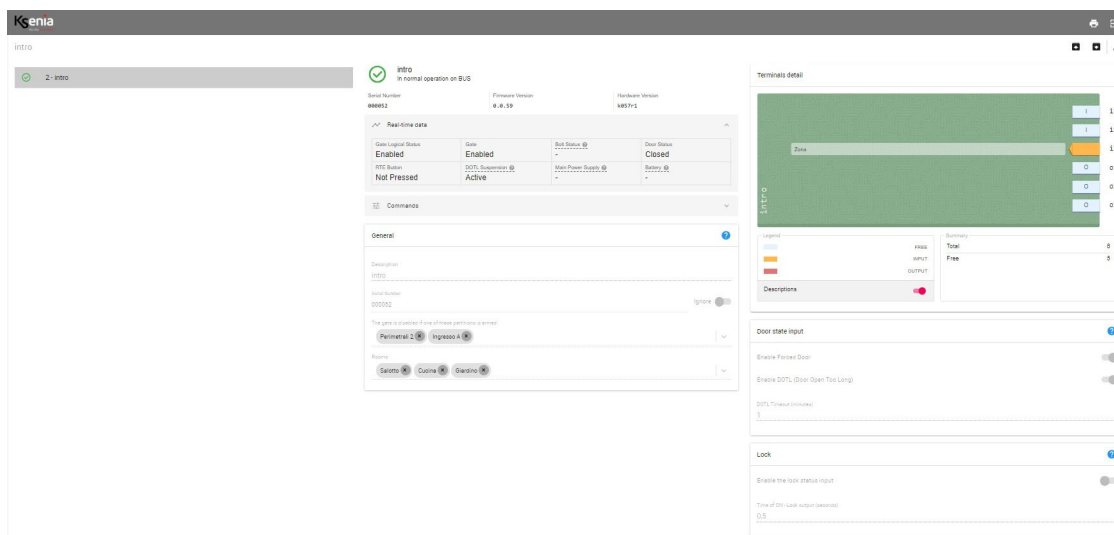
Wiring External power supply supplied by Ksenia and Battery

The image shows the connection with the external power supply supplied by Ksenia (UPS Kit 13.8V/60W code KS17101260.000 or UPS Kit 27.6V/60W, code KS17102460.000).

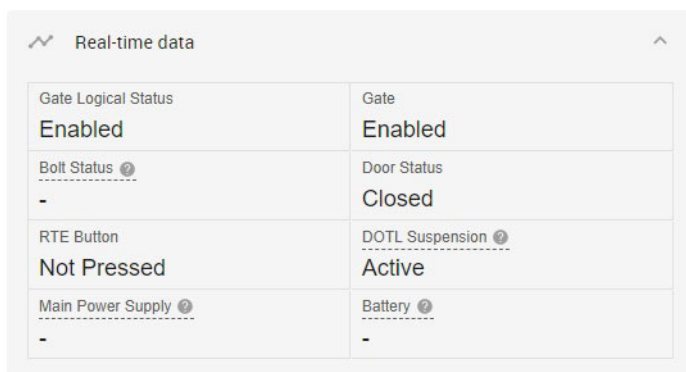


intro module configuration

intro BUS Peripheral menu



Real time data



Label	Possible values
Gate (intro module)	Enabled = allows access only to authorized users. Disabled = access not allowed to users even if authorized. The gate is automatically disabled when at least one of the configured partitions is armed.
Door Status (i3 input – DOOR STATUS)	Open = the magnetic contact is open Closed = the magnetic contact is closed
Bolt status (i5 input – BOLT STATUS)	Open = the door is NOT closed with the multiple locking points Closed = the door is closed with the multiple locking points

Logical Gate Status	Logical status comparing values of Gate, Door Status (i3 input – DOOR STATUS) and Bolt Status (i5 input – BOLT STATUS). Depending on combinations of possible values, it can assume: Open, Forced Open, Open Too Long, Failure, Enabled, Disabled.
RTE button (i4 input - RTE)	Pressed = RTE output button is being pressed Not Pressed = the RTE output button is not being pressed (i4 -RTE input)
Battery (i6 input - LOW BATTERY)	Normal = normal battery voltage Low = battery voltage less than 11V (if 12V power supply) or less than 21V (if 24V power supply). NOTE: If the battery is not connected, it will show "Normal" because the power supply only provides charging information when it is powered by battery.
Main Power Supply (i7 input – AC MONITOR)	Present = mains power supply is present Absent = mains power supply is absent


Table describing the logic applied to the “Gate Logical Status” real time:

Gate	Door status	Bolt status	Gate logical status
Enabled	Open	Open	Open
			Forced open
			Open too long
Enabled	Open	Closed	Failure
Enabled	Closed	Open	Open
			Forced open
			Open too long
Enabled	Closed	Closed	Enabled
Disabled	Open	Open	Forced open
			Open too long
Disabled	Open	Closed	Failure
Disabled	Closed	Open	Forced open
			Open too long
Disabled	Closed	Closed	Disabled

Step-by-step configuration of intro module

In the following paragraphs, an example of a control access system configuration is described, with the following devices installed:

- one intro module (therefore 1 gate);
- two peripherals (volo and ergo-X in the example, but also two volo or two volo-in) for authenticating the users;
- one magnetic contact;
- one RTE button;
- one flashing light to signal the FD (Forced Door) and/or DOTL (Door Open Too Long) alarms.

Step	Menu, Fields and Descriptions	
1	BUS Peripheral -> intro	<p>Description</p> <p>Serial number</p> <p>The gate is disabled if one of these partitions is armed.</p> <p>When at least one partition is armed, the gate will turn disabled. No one can pass through a disabled gate, not even authorized users.</p> <p>Rooms</p> <p>You can set one or more rooms to display intro on graphic Maps and lares 4.0 User App (the door category icon is used).</p>
2		<p>i1= (input terminal 1 - freely configurable)</p> <p>Click on the blue rectangle of i1, the Zones configuration page opens, without changing the page (*), where you can complete the configuration and where the Peripheral Association is automatically filled in.</p> <p>Make your changes of the zone directly in the BUS Peripheral -> intro page or from the System -> Zones page, from where you can return to the intro configuration page by clicking on the "Go to peripheral" button.</p> <p>Note: this zone is like all the others, if you want it to be armed when the gate is disabled, the configured partition must be equal to, at least, to one of those configured in the intro device, which disables the gate if armed.</p> <p>(*) The configuration mode of the Zones directly from the BUS devices page, without changing pages, has been extended to all peripherals where the graphic terminals image is already present.</p>
		<p>i2= (input terminal 2 - freely configurable)</p> <p>Same description as i1</p>

		<p>i3= (input terminal 3 - preconfigured as DOOR STATUS)</p> <p>Although configured, a zone must be associated with terminal i3 for reading the door status (open or closed) and for triggering the DOTL (Door Open Too Long) and FD (Forced Door) alarms.</p> <p>Click on the i3 rectangle to configure the Zone: the Zones configuration page opens, without changing pages, where the Peripheral Association will be automatically filled in and where you can complete the configuration.</p> <p>Note: this zone is like all the others, if you want it to be armed when the gate is disabled, the configured partition must be equal to, at least, one of those configured in the intro device, which disables the gate if armed.</p>
		<p>i4 (Input Terminal 4 - preconfigured as RTE-Request to exit)</p> <p>It does not require configuration, default NO, it is sufficient to physically connect it to an RTE output button.</p>
		<p>i5 (Input Terminal 5 - preconfigured as BOLT STATUS)</p> <p>It does not require configuration, it must only be connected if the electric lock provides this information.</p>
		<p>i6 (Input Terminal 6 - preconfigured as LOW BATTERY)</p> <p>It does not require configuration, it is sufficient to connect it with the "Batt. Low" output of the external power supply supplied by Ksenia.</p>
		<p>i7 (Input Terminal 7 - preconfigured as AC MONITOR)</p> <p>It does not require configuration, it is sufficient to connect it to the "AC OK" output of the external power supply supplied by Ksenia.</p>
		<p>O1 = output terminal 1 (1A) - jumper 5 - default NO, freely configurable from the Outputs page or by clicking on O1 rectangle, without changing the page.</p>
		<p>O2 = output terminal 2 (1A) - jumper 6 - default NO, freely configurable from the Outputs page or by clicking on O2 rectangle, without changing the page.</p>
		<p>O3 = output terminal 3 (8A) - jumper 4 - default NO, freely configurable from the Outputs page or by clicking on O3 rectangle, without changing the page.</p>
		<p>O4 (output terminal 4 - preconfigured as GATE STATUS)</p> <p>It does not require configuration, jumper 7 - default NO, it is activated automatically when the gate is disabled.</p>
		<p>O5 (output terminal 5 - preconfigured as ALERT)</p> <p>It does not require configuration, jumper 8 - default NO, it is activated automatically in case of DOTL or FD alarms</p>
		<p>Save and Apply the session as usual, at the end.</p>

Enabling DOTL and FD alarms

ATTENTION! It is necessary to associate a zone with the i3 terminal to read the door status and for the DOTL (Door Open Too Long) and FD (Forced Door) events to be generated.

3	Enable Forced Door	Enable/Disable the FD (Forced Door) feature to detect the opening of the sensor associated to the zone with i3 terminal, without having opened the door before, and to trigger the FD alarm.
	Enable DOTL (Door Open Too Long)	Enable/disable the DOTL feature to detect the door, associated to the zone with i3 terminal, that remains open for a longer period than the time set in the following field, after which the DOTL alarm is triggered.
	DOTL timeout (minutes)	Set the DOTL timer within which the door must close, otherwise the DOTL alarm is triggered. Possible values: 1...30 minutes, default 1 min.

Enabling lock status reading

4	Enable the lock entry status	It enables the reading of the lock entry status (bolt open/closed) if the lock is equipped with it and it is wired. (Lock status: i5 input - BOLT STATUS)
	Time of ON - Lock output (seconds)	Time expressed in seconds, resolution in tenths of a second, during which the lock output (LOCK 1) programmed as monostable, remains active.

Configuring two devices to authenticate users authorized to pass through the gate

NOTE: In our example we hypothesized the presence of two peripherals (volo and ergo-X), but, in case you have a volo-in device, open the menu <BUS Peripheral -> User Interfaces -> volo-in> and configure it in the usual way.

Step	Menu	Description
1	BUS Peripherals ->User Interfaces -> Volo	Add a volo reader to the configuration in the usual way.
2	BUS Peripherals ->User Interfaces -> ergo-X	Add an ergo-X keypad to the configuration in the usual way.

Configuring users authentication and authorization to pass through the gate

Configuring User Profiles (Installer only)

Step	Menu	Description
1	User Management -> Profiles	From Installer: Add an Employee profile (access level = Standard) and an Administrator profile (access level = Administrator).

Configuring Access Permissions and Gate Association

Access Permissions (Administrator User only) - Gate Association (Administrator and Master User)



Note: Having to configure the "WHO" to authorize and the "WHERE" to pass, with this association the administrator user is able to decide the "WHERE"; for the "WHO", the administrator must perform the next step "Configuring the users and authorize them to pass through the gate".

Step	Menu	Description
1	User Management -> Access Permissions	<p>From Installer - Administrator User level or From lares 4.0 App - Administrator User level</p> <p>Add two Access Permissions: <i>Permission-employee</i>: access from Monday to Friday, two time slots: 09.00-13.00 and 14.00-18.00, excluding holidays. <i>Permission-admin</i>: access from Monday to Sunday, All day, including holidays.</p> <p>Gates: The list contains the names of the gates configured in the system by the installer (in our example the list contains only one intro). The Administrator user has the possibility to associate all gates to each programmed access permission. By default, each access permission is associated to all gates, but it is also possible to individually choose which gate to associate, by deleting the default setting first.</p>

Configuring users and authorize them to pass through the gate

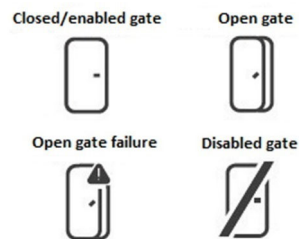
Step	Menu	Description
1	User Management -> Users	<p>From Installer – Installer or From Installer – Administrator User level or From lares 4.0 App with Administrator level</p> <p>Add two users: <i>Employee-user-name</i> and assign the Employee profile. <i>Administrator-user-name</i> and assign the Administrator profile.</p> <p>Enable them to use the key and PIN code for authentication and configure the remaining fields in the usual way.</p> <p>Associate the <i>Permission-Employee</i> Access Permission with the <i>Employee-User-Name</i></p> <p>Associate the <i>Permission-Administrator</i> Access Permission with the <i>Administrator-User-Name</i>.</p>
		<p>IMPORTANT: the users in question must have at least one partition, same as those configured for volo and ergo-X, in our example, through which they must authenticate themselves to pass through the gate.</p>

Commands - Open door

Opening the door with PIN, with RFID key, from lares 4.0 APP and from web interface

- **From Installer - Installer:** BUS Peripheral ->intro -> Command section -> Door Opening, click Open; enter PIN if required;
- **From Installer - User:** from the Graphic Maps page the user can open the door by clicking on the *Gate enabled* icon and enter the PIN if required;
- **from ergo-x:**
with PIN: enter your PIN code and wait for a few seconds (they are necessary if you have to press a key to activate a scenario) or press the X key immediately, for immediate door opening;
with key: bring the key closer to the RFID area, the LED flashes blue quickly, wait a few seconds (they are necessary if you have to press a button to activate a scenario) or press the X key immediately for immediate door opening;
- **from volo/volo-in:** bring the key closer to the RFID area, the LED flashes blue fast, if the key is removed immediately the door opens immediately; if the key remains longer, the colored LEDs for entering the scenarios begin to flash;
- **from lares 4.0 App:** from the Security-> Access Control -> Gates page, the authorized user can open the door by tapping the gate icon (if the icon shows a closed/enabled door), enter PIN if required.

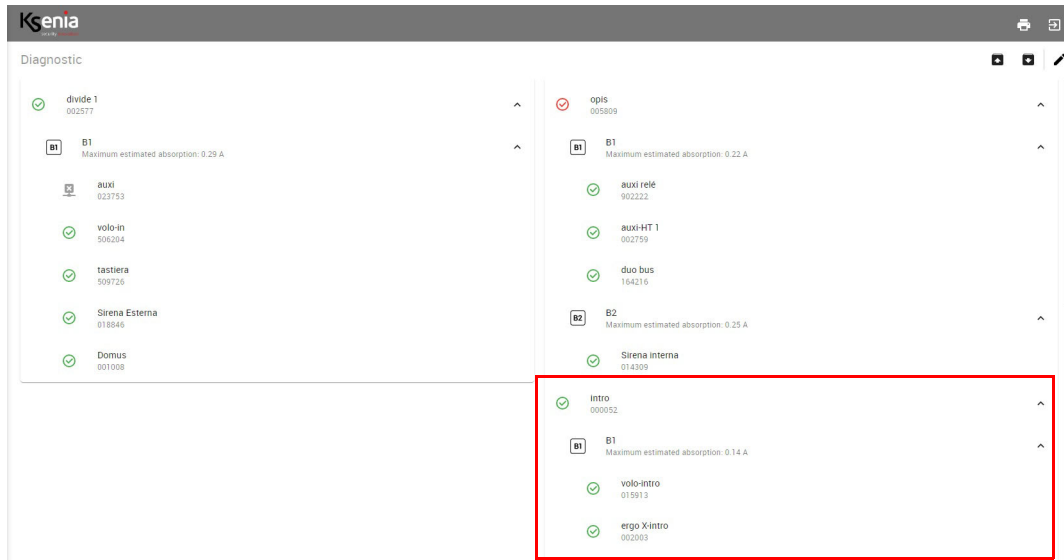
Gate Status Icons



Diagnostic

intro module is visible on the Diagnostics page of the system, like all other devices; intro Peripherals BUS is handled like opis and divide branches.

The current consumption of intro is 0 (zero) because it is powered by external power supply; the devices on intro Peripherals BUS are powered by intro itself so the consumption is not visible.





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