



EN ENGLISH



AIOM

10-Input/10-Output Module

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AIOM
10-Input/10-Output Module

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the confidence you placed in CDVI.**

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10-Input/10-Output Module

1] PRODUCT PRESENTATION

The AIOM 10-Input/10-Output Module module supports 10 zone inputs and 10 outputs. It can be connected to the ATRIUM 2-Door Controller's, AC22, anywhere on the 1220m (4000ft) 4 conductor RS485 communication bus. Effortless auto-detect technology identifies the AIOM on the communication bus.

- **10 Inputs (20 using zone doubling technology)**
- **10 Outputs**
- **Auto-detect technology**
- **Up to 100 AIOM module are supported per AC22**
- **AC22 controller can power a maximum of 2 AIOM modules via it's 12V Local Bus. External 12VDC power supply will be required if additional modules are added.**
- **1220m (4000ft) 4 conductor RS485 expansion bus (No jumpers or DIP switches)**
- **Comprehensive LED status indicators**



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10-Input/10-Output Module

2] NOTES AND RECOMMENDATIONS

FCC & IC Compliance

This device complies with Part 15 of the FCC rules Class A. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. This class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. The ATRIUM AIOM 10-Input/10-Output Module is also compliant with EN55022:1998, amendment 1:1995, Class A.

UL Compliance

To comply with UL listings, the following requirements must be met:

- Use of UL listed readers (Wiegand: 26-bit, 30-bit and 40-bit; mag stripe: up to 32 digits)
- Use of a UL recognized tamper switch on every housing cabinet for the AIOM
- Use only UL listed cables
- Use only UL listed adaptors

Note: All circuits are power limited.

UL 294 Compliance Notice

- Use only UL listed power supply
- Connect CDVI LED status indicator, part number 7020-0001-0000, to the DC Input gray terminals of the AIOM.

Note: Backup battery provides operation of up to 12 hours but has been tested for 4 hours per Section 33 of UL 294, fifth edition.



The system's location and wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.

Free Technical Support

For technical support in Canada or the U.S., call 1-866-610-0102, Monday to Friday from 8:00 a.m. to 8:00 p.m. EST. For technical support on the International, please see the last page of this document or visit our website: www.cdvigroup.com.

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10-Input/10-Output Module

Recommended Wiring

Equipment	Wire Type	Size	Maximum Length
Zone input and output	2 conductors, copper 22AWG (0.64mm)	22AWG (0.64mm)	600m (2000ft.)
RS485 bus, Star or Daisy Chain (no BIAS/EOL required)	CAT 5/5e or 4 pairs	24AWG (0.51mm)	1220m (4000ft.)
	4 conductors, copper	26AWG (0.40mm) to 18AWG (1.02 mm)	

Specifications

System Resources	
Operating Temperature	-20°C to +70°C (-4°F to +158°F)
Humidity	0% to 85% (non condensing)
System Autonomy	Full Distributed Architecture (100% Off-line Operation)
Firmware	Online Upgradeable
PCB Dimensions	19.5cm (7.68") x 8.9 cm (3.5")
Cabinet Dimensions	29 cm (11.4") high, 28 cm (11") wide, 8 cm (3.15") deep

Inputs	
Multi-Purpose Inputs	10 zone inputs (up to 20 using ZONE DOUBLER) with optional individual WIRE CUT & WIRE SHORT supervision.
Smoke Detector	Future use
Box Tamper	Normally Closed (N.C.) contact

Outputs	
Multi-Purpose Outputs	10 outputs open collector 100mA

Communication	
LOCAL BUS	RS485 @ 57600Baud supporting star and/or daisy chain topologies up to 4000ft (1220 meters)

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10-Input/10-Output Module

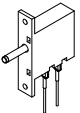
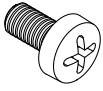
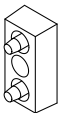
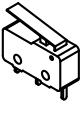
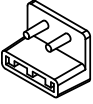

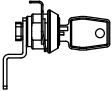
3] PACKAGE CONTENTS

This chapter details how to install and setup the ATRIUM 10-Input/10-Output Module.




Content of the 10-Input/10-Output Module

The 10-Input/10-Output Module contains:

- One 10-Input/10-Output Module module in its cabinet with connection diagram label
- Metal Box kit:

							
	Wall Switch and a white wire (115mm) with a log at each end	Bolts and Nuts	Wall Switch Spacer	Door Switch and 2 white wire (350mm) with a log at one end	Door Switch Support	Metal box screw	Metal box lock and key
Metal Box Kit	1	2	1	1	1	4	1

If any item is missing, please notify your distributor immediately.

			
	1K Resistor	2.2K Resistor	Fastener (PCB Holder)
Installation Kit	21	10	5

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10-Input/10-Output Module

Location and Mounting

The cabinet is designed to be installed indoors, in a safe and secure location. Suggested locations include electrical rooms, communication equipment rooms, closets or in the ceiling. To save time, wiring and facilitate testing, install the cabinets at an equal distance between its controlled doors. Normal temperature and humidity levels should be maintained.

Cabinet Dimensions:

29 cm (11.4") high, 28 cm (11") wide, 8 cm (3.15") deep

Multiple Conduit Knock-outs:

Two 19.05mm (0.75") on each side and one 12.7mm (0.5") on top

Minimum Clearance For Cabinet:

25cm (10") clear space around all sides

38cm (15") clear space in front of cabinet

Minimum Clearance From Electrical Interference:

2.4m (8ft.) from high voltage equipment or wiring and from electrical equipment likely to generate interference

1.2m (4ft.) from telephone equipment or lines and 8m (25ft.) from transmitting equipment



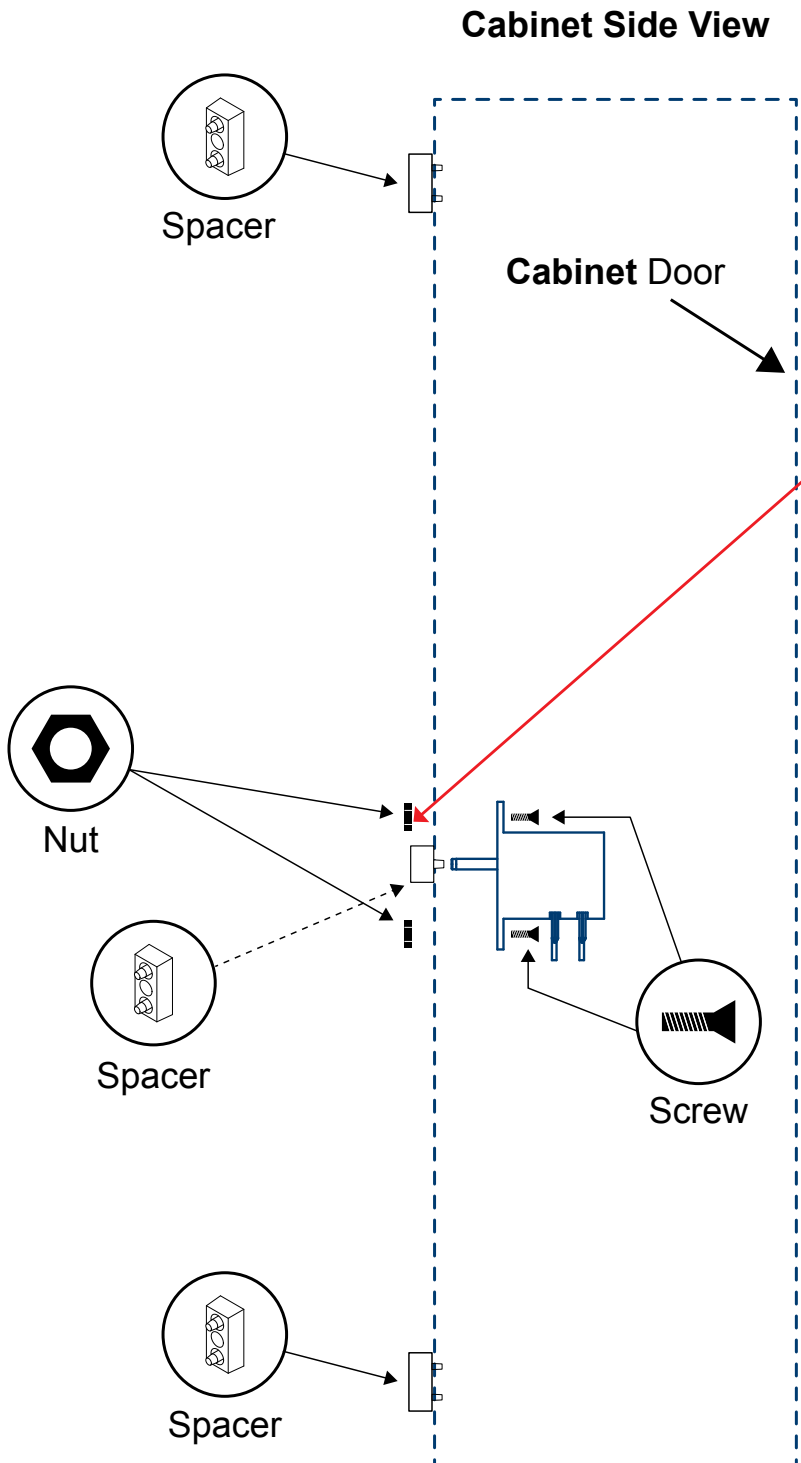
The system's location and wiring methods shall be in accordance with the National Electrical Code, ANSI/NFPA 70.

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10-Input/10-Output Module

4] MOUNTING INSTRUCTIONS

Install the wall tamper switch using the supplied bolts and nuts as shown in the following picture.

Install the tamper switch plastic spacer on the back at bottom left side of the box as show in the following picture.



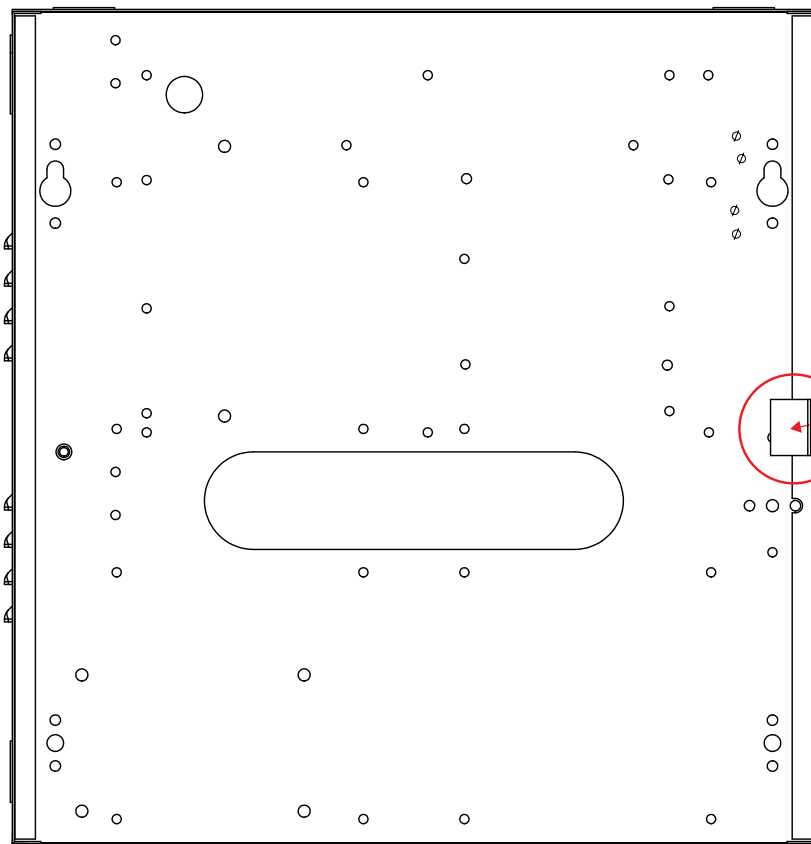
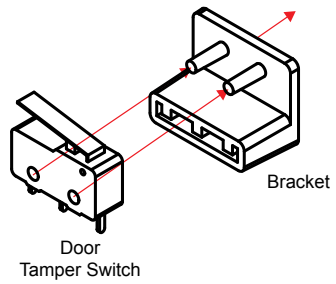
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10-Input/10-Output Module

Install the door tamper switch by aligning the switch holes to the pre-installed plastic bracket pins. Press firmly to secure the tamper switch in position, then fix the bracket to its mounting flange.

Refer to page <?> for wiring diagram.

Fix the tamper switch to the bracket then mount the bracket on the mounting flange



Door Tamper Switch Mounting Flange



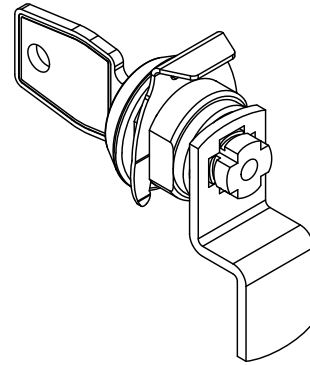
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10-Input/10-Output Module

Installing the box lock

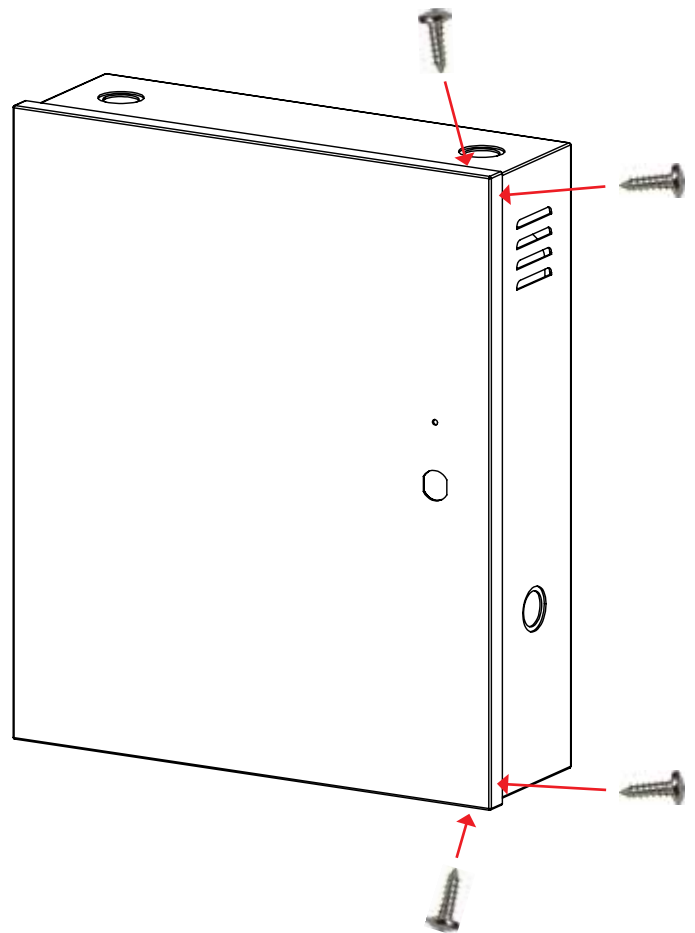
Installing the box lock allows to secure the box from non authorized access. If needed install the box lock as shown in the following picture.

1. Remove the box door knock-out.
2. Insert the lock in the hole.
3. Slide the "U" metal part into the lock groove.



Alternatively or complementary to the box lock, the box may be secured by fixing the cover to its base using screws. However this should be done only once the installation of the 10-Input/10-Output Module system is completed.

1. Use the 4 screws supplied to secure the box cover to its base as shown in the following picture.



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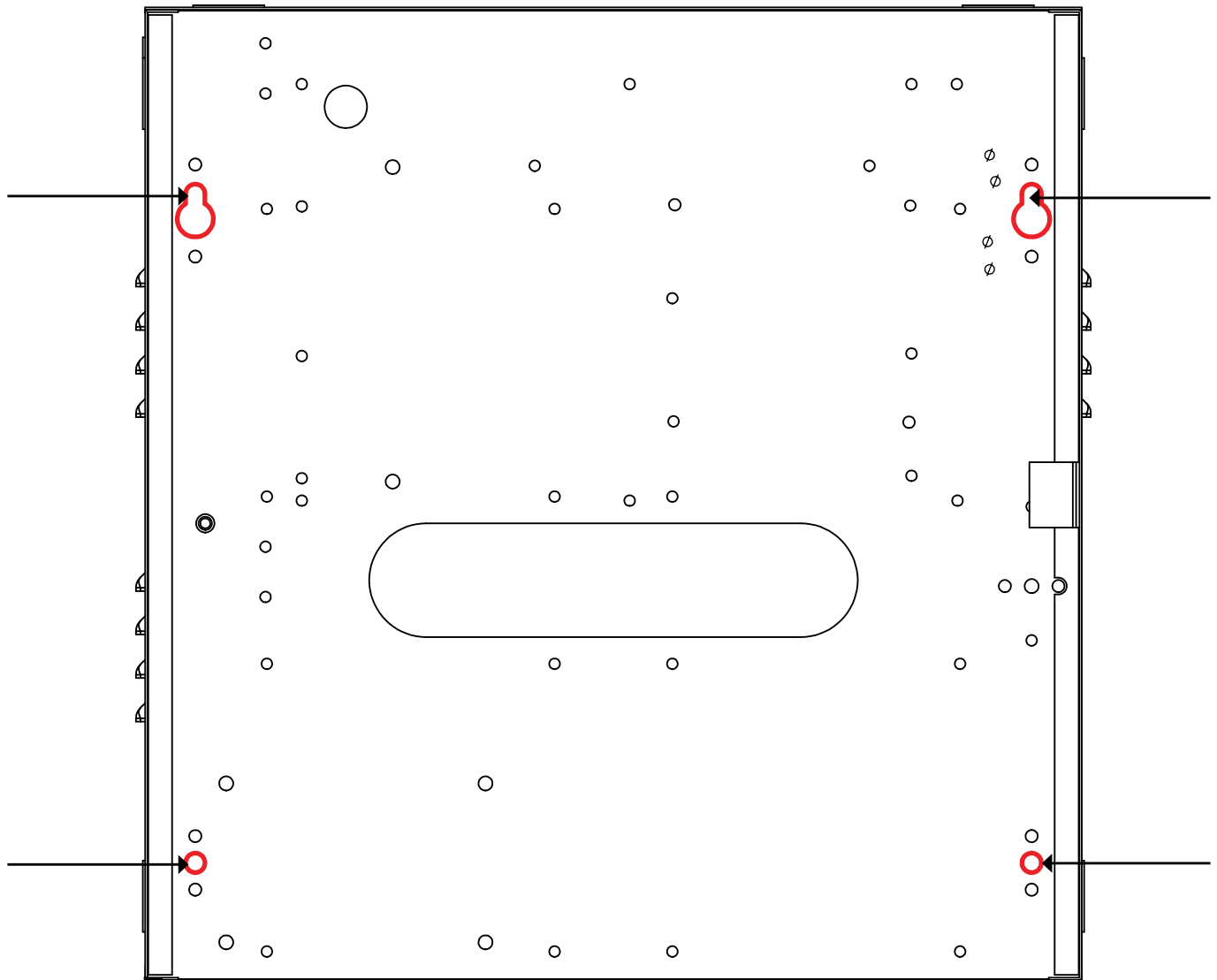
10-Input/10-Output Module

Fixing the Box to its Location

Install the box to its location using 4 screws (not supplied) as shown in the following picture.



If the wall tamper switch is used, make sure that the tamper switch arm moves freely and is completely pushed in when the enclosure is installed on the wall.

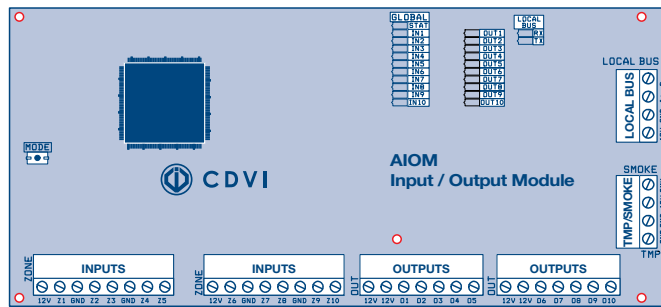
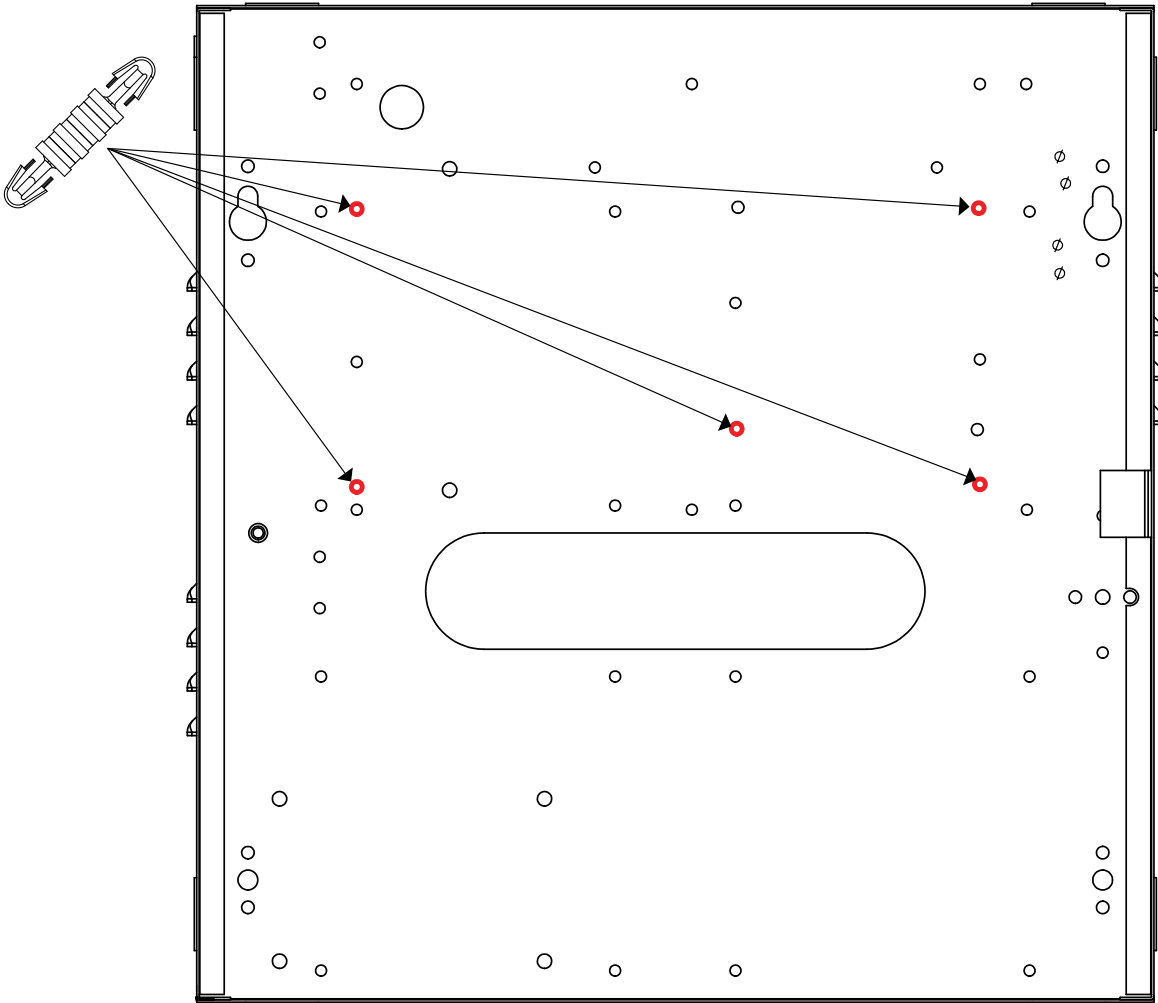


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10-Input/10-Output Module

Installing the 10-Input/10-Output Module PC board

Install the 5 fasteners (PCB holder) supplied respectively to the box holes identified in red in the following picture.



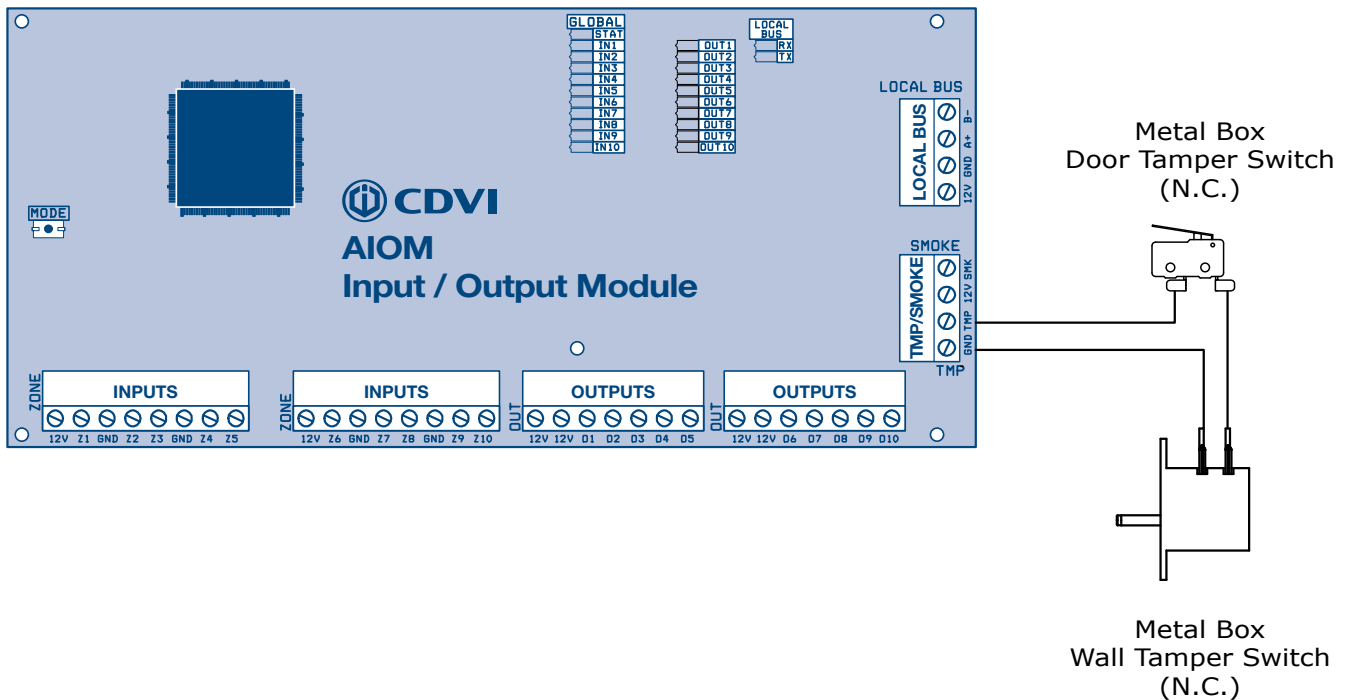
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10-Input/10-Output Module

5] WIRING DIAGRAM

Connecting the Box Tamper Switches

Connecting the tamper switches allows the AIOM Module to detect when the cabinet door is opened and/or when the cabinet is removed from the wall. To install the tamper switches, see "Installing the Tamper Switches". To use both switches:

1. Connect one end of the supplied wire, the one with a log at each end, to the door tamper switch terminal and the other end to the wall tamper switch terminal.
2. Connect the other terminal of the door tamper switch to the "TMP" terminals using the supplied wire.
3. Connect the other terminal of the wall tamper switch to the "GND" terminals using the supplied wire.



To use only one switch:

1. Connect one terminal of the tamper switch to the "TMP" terminals using the supplied wire.
2. Connect the other terminal of the same tamper switch to the "GND" terminals using the supplied wire.



If you do not use the tamper switch, connect a wire between the "TMP" and "GND" terminals.

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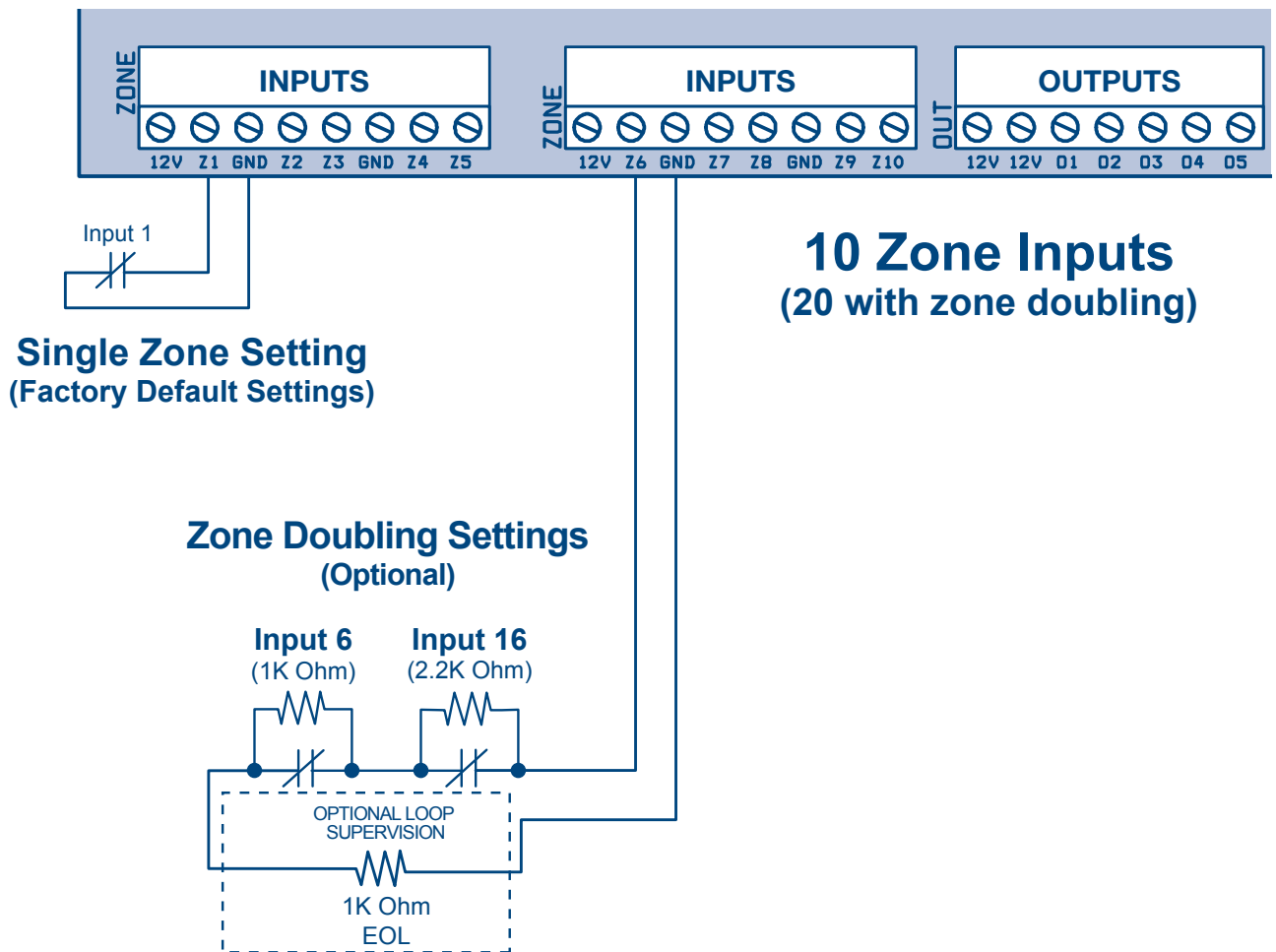
10-Input/10-Output Module

Connecting Inputs

The 10-Input/10-Output Module can monitor the state of up to 20 devices (using zone doubling) such as magnetic contacts, motion detectors, temperature sensors, or other devices. The following are examples of the type of inputs that can be monitored:

Magnetic Door Contact:

Permits supervision of door "status" (opened, closed). When using the default system settings, you can easily swap terminals to troubleshoot the installation.



See "Recommended Wiring" for more information on wiring type, size, and maximum length.

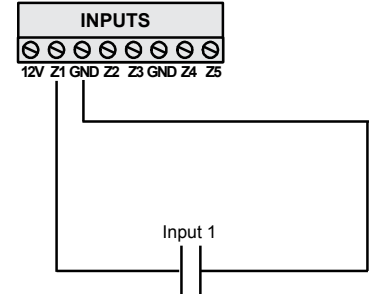
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10-Input/10-Output Module

Examples of Input Connection Methods

Single without EOL and without TAMPER Supervision (Limit of 1 Detection Device on the Input)

When using this method, only one device can be connected to the input. The input must be connected using only one Contact (NO or NC: programmable per INPUT in Software) as described in the following figure. This setup will not support WIRE CUT or WIRE SHORT supervision, but will generate an alarm condition when the state of the input is breached.

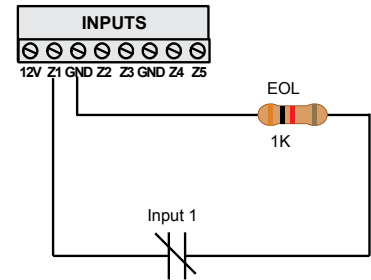


WIRE SHORT supervision: NO

WIRE CUT supervision: NO

Single with WIRE SHORT Supervision (Limit of 1 Detection Device on the Input)

When using this method, only one device can be connected to the input. The input must be connected using only one Contact (NO or NC: programmable per INPUT in Software) as described in the following figure. This setup will not support WIRE CUT supervision but offers WIRE SHORT supervision and will generate an alarm condition when the state of the input is breached.

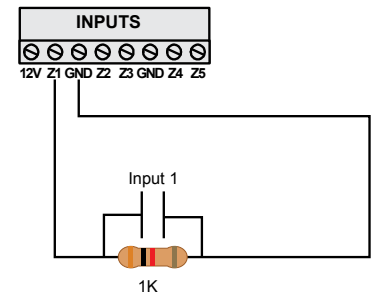


WIRE SHORT supervision: YES (Detected as INPUT SHORT)

WIRE CUT supervision: NO

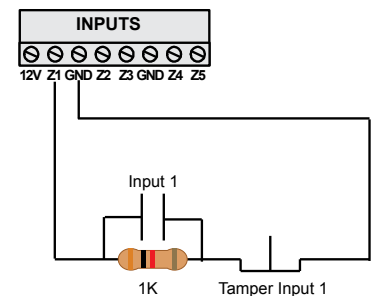
Single with WIRE CUT Supervision (Limit of 1 Detection Device on the Input)

When using this method, only one device can be connected to the input. The input must be connected using only one Contact (NO or NC: programmable per INPUT in Software) as described in the following figure. This setup will support WIRE CUT supervision but will not offer WIRE SHORT supervision and will generate an alarm condition when the state of the input is breached.



WIRE SHORT supervision: NO

WIRE CUT supervision: YES (Detected as INPUT CUT)

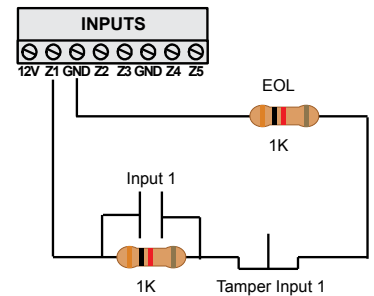


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10-Input/10-Output Module

Single with WIRE SHORT and WIRE CUT Supervision (Limit of 1 Detection Device on the Input)

When using this method, only one device can be connected to the input. The input must be connected using only one Contact (NO or NC: programmable per INPUT in Software) as described in the following figure. This setup will support both WIRE CUT and WIRE SHORT supervision and will generate an alarm condition when the state of the input is breached.

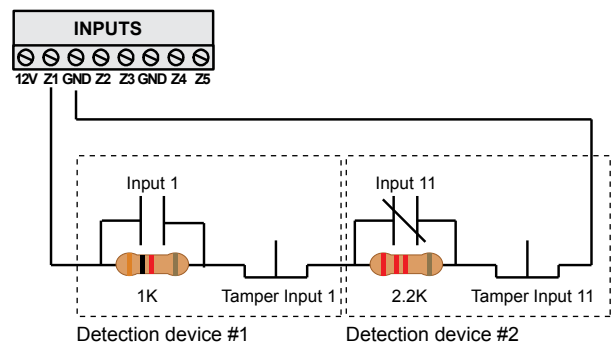


WIRE SHORT supervision: YES (Detected as INPUT SHORT)

WIRE CUT supervision: YES (Detected as INPUT CUT)

Doubled with WIRE CUT Supervision (2 Detection Device on the Input)

When using this method, two device can be connected to the input. The input must be connected using two Contacts (NO or NC: programmable per INPUT in Software) as described in the following figure. This setup will support WIRE CUT supervision but not WIRE SHORT supervision and will generate an alarm condition when the state of one of the input is breached.

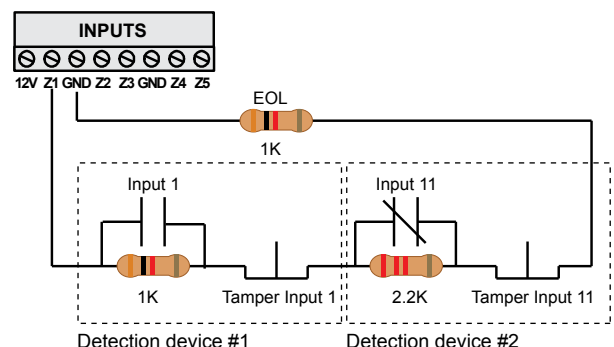


WIRE SHORT supervision: NO

WIRE CUT supervision: YES (Detected as INPUTS CUT)

Doubled with WIRE SHORT and WIRE CUT Supervision (2 Detection Device on the Input)

When using this method, two device can be connected to the input. The input must be connected using two Contacts (NO or NC: programmable per INPUT in Software) as described in the following figure. This setup will support WIRE CUT and WIRE SHORT supervision and will generate an alarm condition when the state of one of the input is breached.



WIRE SHORT supervision: YES (Detected as INPUTS SHORT)

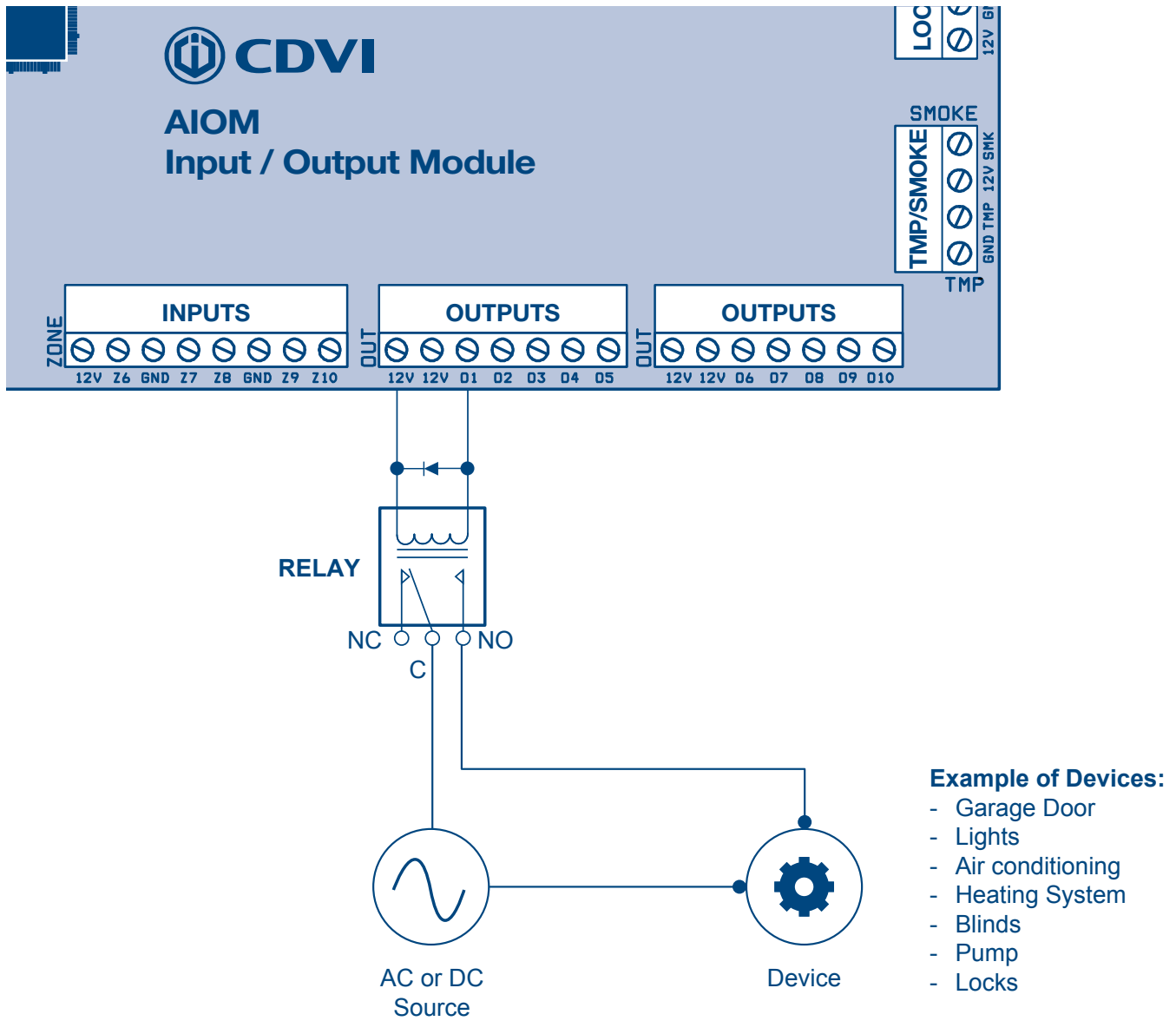
WIRE CUT supervision: YES (Detected as INPUTS CUT)

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10-Input/10-Output Module

Connecting Outputs

The ATRIUM 10-Input/10-Output Module can control up to 10 devices such as garage doors, lights, air conditioning, heating systems, blinds, pumps, locks, etc. Devices requiring/using 100mA or less @ 12Vdc may be directly connected to the outputs. Outputs can be configured as normally open (deactivated) or normally closed (activated); refer to the ATRIUM instruction manual for more information.



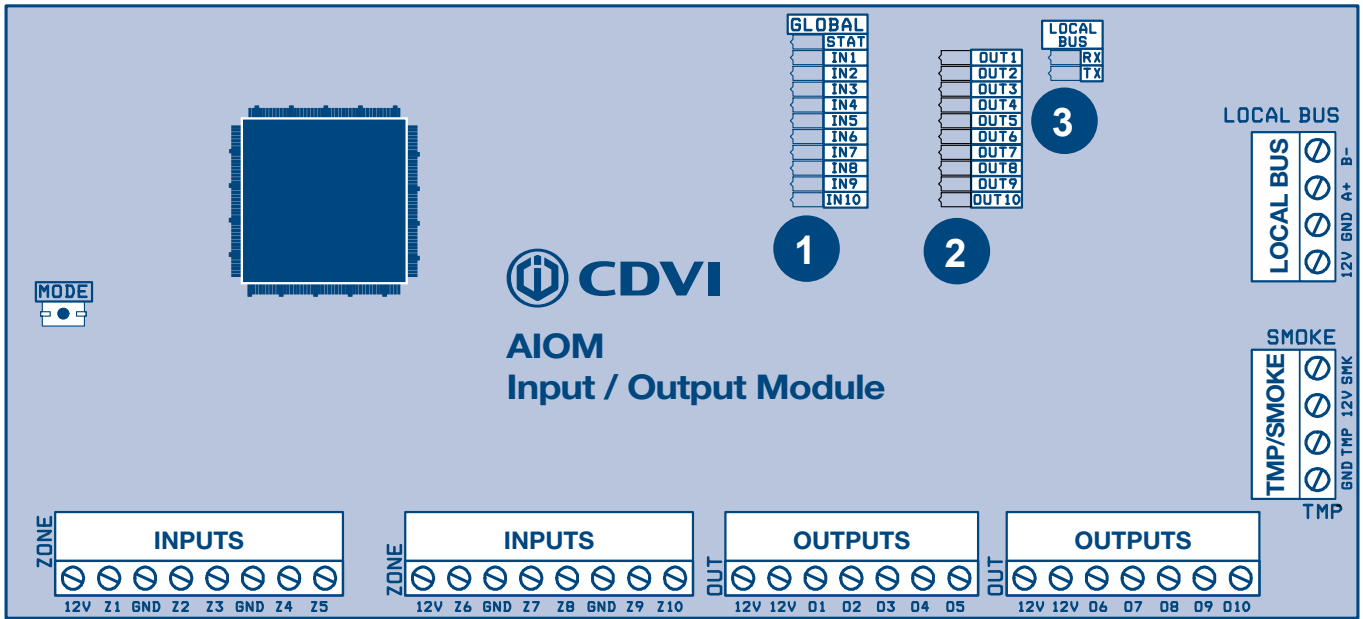
See "Recommended Wiring" for more information on wiring type, size, and maximum length.

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10-Input/10-Output Module

LED Indicators

The ATRIUM 10-Input/10-Output Module has several status LEDs that are very useful to diagnose problems when using or installing the ATRIUM system. Refer to the following picture for the emplacement of those LEDs on the ATRIUM 10-Input/10-Output Module. All LEDs are explained in the following pages.



1	GLOBAL	STAT	Flash once per second: Firmware is operating normally.
			Flash rapidly: Firmware is upgrading.
		Inputs IN1 to IN10	Green LED: Input breached
			Off LED: Input normal (OK)
2	OUTPUTS	OUT1 to OUT10	Green LED: Output activated.
			Off LED: Output not activated.
3	LOCAL BUS	RX	Green LED flashing: Data received on local bus.
		TX	Green LED flashing: Data transmitted on local bus.

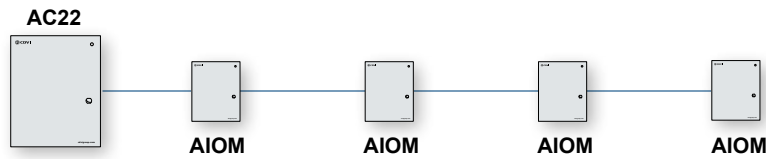
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10-Input/10-Output Module

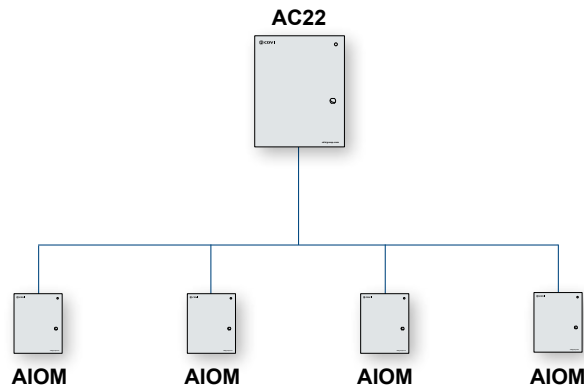
Connecting the 10-Input/10-Output Module to the ATRIUM 2-Door Controller

The 10-Input/10-Output Module has a RS485 LOCAL BUS terminal allowing the connection with the ATRIUM 2-Door Controller, up to 1220m (4000ft). Connect the module's to the ATRIUM 2-Door Controller's LOCAL BUS using Bus, star and/or daisy chain topologies. For example:

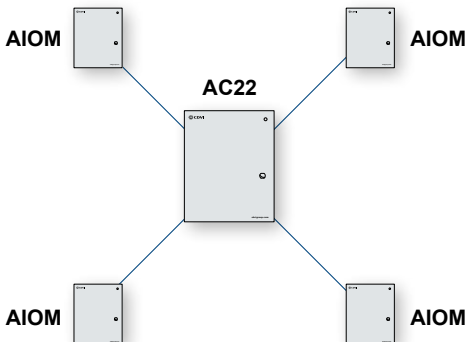
DAISY CHAIN



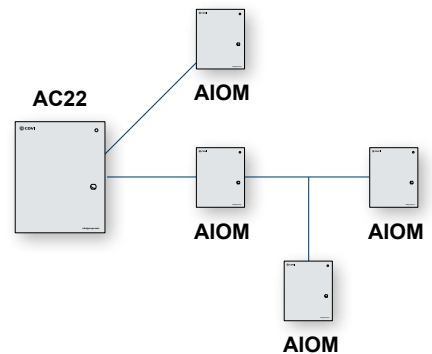
BUS



STAR



MIXED DAISY CHAIN/BUS/STAR



AIOM 10-Input/10-Output Module

6] Warranty - Terms & Conditions

The "5 Year Warranty" is offered by CDVI exclusively for CDVI products featuring the logo "5 Year Warranty", and supplied by authorized CDVI dealers participating in the offer. You can obtain the address of the local authorized dealer participating in the offer by contacting CDVI or a local CDVI subsidiary. The "5 Year Warranty" is only applicable to hidden defects detected during the lifetime of the product, as defined by the CDVI Group (5 years or 200 000 operations - whichever of the two expires first).

The "5 Year Warranty" conditions shall not modify the sales conditions between CDVI and its customers.

DURATION OF THE OFFER:

- This offer is valid from July 1st 2010; CDVI reserves the right to terminate this offer without prior notice.
- However, any product already registered up to the date of withdrawal of the offer will remain eligible for the "5 Year Warranty".
- The warranty applies only to the available products mentioned in the above statement.

CONDITIONS :

- Hidden defects are guaranteed for an unlimited shelf life (period of time before use).
- To be eligible for the "5 Year Warranty", the product must be registered at CDVI within one month of its delivery to the end user, by completing in and returning back the "warranty" form by fax, email or post to the local CDVI subsidiary. This information may also be registered on line at www.cdvigroup.com.
- Only the issue of the "5 Year Warranty" certificate by CDVI can confirm product registration; CDVI may not be held responsible in the event of loss or non-presentation of the form.
- The "5 Year Warranty" only applies to products installed by a skilled and experienced personal with the necessary trade qualifications to install according to the highest standards, respecting the standards, instructions and guidelines defined by CDVI and according to the maximum recommended specifications.
- To enable CDVI to determine whether a product is eligible to claim for the "5 Year Warranty", after prior issue of a return of materials authorization number (RMA) by CDVI, the customer must return the product and all of its accessories in the original packaging with a copy of its invoice. The transport fees shall be paid by the customer and the package must be returned to CDVI or to a CDVI authorized repair centre.
- Eligibility for the "5 Year Warranty" cover must be confirmed by CDVI.
- The "5 Year Warranty" only covers the replacement or repair of the parts acknowledged as faulty by CDVI.
- CDVI reserves the right to respect its obligation by replacing the product or the parts acknowledged as faulty by a standard part replacement or by a product or new parts, or by an updated or improved version of the product with identical or similar functionalities.
- In respect of the applicable law, CDVI cannot be held responsible for material or immaterial damages caused to goods or to third parties and as a direct or indirect result of the installation, utilization, product faults or poor functioning of a device.
- The "5 Year Warranty" is non-assignable and non-transferrable; only the person who registered the aforementioned warranty may benefit from the warranty.
- The "5 Year Warranty" is limited to the eligible product and is strictly limited to the conditions in effect on the date of purchase by the customer.

Reference : G0301FR0429V01
Extranet : EXE-CDVI_IM AIOM CMYK A4 EN 01



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