ATRIUM

ADH10

ATRIUM
Schlage Integration Module

The Installer's Choice
cdvigroup.com

Thank You for buying our products and for the confidence you placed in CDVI.

ADH10
ATRIUM - Schlage Integration Module (Control up to 10 Schlage Door Handles)

1] PRODUCT PRESENTATION

One ATRIUM ADH10 controller has the capacity to control ten NDE, AD300 and/or AD400 SCHLAGE door handles. ATRIUM ver. 3.1 (or higher) multi-account software supports up to 100 door handles per account (site). This is accomplished by using ten ADH10 controllers connected to an IP network. Effortless auto detect technology identifies the SCHLAGE door handle on the communication bus. A pre-assembled universal power supply is included with every ADH10 making this unit an industry leader in efficiency and simplicity.

- **Control 10 door handles**
- **On-board Ethernet Port with AES 256-bit encryption**
- **Auto-detect technology**
- **10,000 users**
- **10,000 cards**
- **25,000 Event Buffer**
- **100 holidays**
- **1,000 Access Levels**
- **1,000 Schedules each supporting up to 100 time periods (dd, hh:mm) and recurrence**
- **Full calendar with leap year support**
- **Time zone definition (full D.S.T. support)**
- **1220m (4000ft) 4 conductor RS-485 expansion bus (No jumpers or DIP switches)**
- **Comprehensive LED status indicators**

Pre-assembled universal power supply included

SCHLAGE DOOR HANDLE COMPATIBILITY:

Bluetooth™ 4.0
Low Energy

NDE
Wireless Electronic Lock
(Work with GWE)

AD-300
Hardwired Electronic Lock

900MHz

AD-400
Wireless Electronic Lock
(Work with PIM400-485)

2] NOTES AND RECOMMENDATIONS

Free Technical Support

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

Recommended Wiring

Equipment	Wire Type	Size	Maximum Length
Ethernet	CAT 5/5e	-	100m (300ft)
RS485 bus (Daisy Chain)	Belden 9841, 9842 or equivalent (2 or 4 conductor shielded)	24AWG (0.51mm)	1220m (4000ft.)

* The Minimum Size Equipment Conductors for the AC mains required are 14 AWG if made of Copper or 12 AWG if made of Aluminium or Copper-Clad Aluminium. Do not use any switch-controlled outlets to power the system.

Specifications

System Resources	
Doors	10 doors
Cards and users	10,000 cards and users
Schedules	1000 Schedules each supporting up to 100 time periods
Buffered Events	25,000 events
Holidays	100 holidays
Access Levels	1000 access levels
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	19.9cm (7.83") x 12.38 cm (4.875")
Cabinet Dimensions	29 cm (11.4") high, 28 cm (11") wide, 8 cm (3.15") deep

Inputs	
Box Tamper	Normally Closed (N.C.) contact

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Communication

LOCAL BUS	RS485 @ 9600Baud supporting daisy chain topology, up to 4000ft (1220 meters)
ETHERNET	10/100 Base-T, Auto Sensing, 100m(300ft)

Power Supply

AC Power	120-240Vac, 1.2A
Frequency	50Hz/60Hz
Output	24Vdc, 2.5A
AC Terminal Fuse	250Vac, 2.5 A, Time Lag, Slow Blow, Operating Temperature: -55°C to +125°C
Power Loss Indicator	Yes (DC IN)

Do Not Connect to a Receptacle Controlled by a Switch.

On-Board Protection (Fuseless, auto-resume)

Battery	Against reversal, short, current limited/monitored

Power output specifications

Battery Backup

Battery Capacity	12Vdc 7Ah rechargeable acid/lead or gel cell backup battery (UL/ULC: YUASA #NP7-12 recommended, Europe: CDVI B7AH recommended). Ensure proper polarity.
Charging Current	250mA (default), 320mA, 500mA, or 1A. Refer to the user interface instruction manual for more information on how to modify the battery charging current.
Low Battery @	11.8Vdc
Low Battery Restore @	12.2Vdc
Low Battery Cut-Off @	10.5Vdc

Power Outputs (+12Vdc)

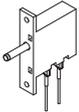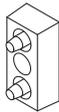| LOCAL BUS	Maximum Current 1000mA

ADH10
ATRIUM - Schlage Integration Module (Control up to 10 Schlage Door Handles)

3] PACKAGE CONTENTS

This chapter details how to install and setup the 10-Door Handle Controller.

What's in the box:

- One ADH10 controller
- metal cabinet and connection diagram label
- AC power cord
- Metal cabinet accessory kit
- Installation 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 wires (350mm) with a log at one end	Door Switch Support	Metal box screw	Metal box lock and key
Metal Cabinet Accessory Kit	1	2 each	1	1	1	4	1

	Pair of Wire, Red and black, for backup battery (400mm)	Fastener (PCB Holder)
Installation Kit	1 pair	5

ADH10
ATRIUM - Schlage Integration Module (Control up to 10 Schlage Door Handles)

Location and Mounting

The cabinet is designed to be installed indoors, in a safe and secure location. Normal temperature and humidity levels should be maintained.

Cabinet Dimensions:

40 cm (15.8") high, 32 cm (12.6") wide, 9 cm (3.54") deep

The Cabinet Can Accommodate:

One 12Vdc @ 4.5AH or 7AH, gel cell type battery and wiring connections (15cm (6") high, 6cm (2.5") wide, 9 cm (3.54") deep)

Battery Model	Voltage	Capacity	Length	Width	Height
YUASA #NP7-12	12 Volt	7 Ah	151mm (5.94")	65mm (2.56")	97.5mm (3.84")
YUASA #NP4-12	12 Volt	4.5 Ah	90mm(3.54")	70mm (2.76")	106mm (4.17")

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.

4] MOUNTING INSTRUCTIONS

The box needs to be prepared before fixing it to its location.

INSTALLING THE TAMPER SWITCHES

Installing tamper switches allows the ADH10 to detect when the cabinet door is opened and/or when the cabinet is removed from the wall. If needed install the tamper switch(es) as follows:

Metal box holes where to fix the wall tamper switch

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.

Cabinet Side View

Spacer

Cabinet Door

Nut

Spacer

Screw
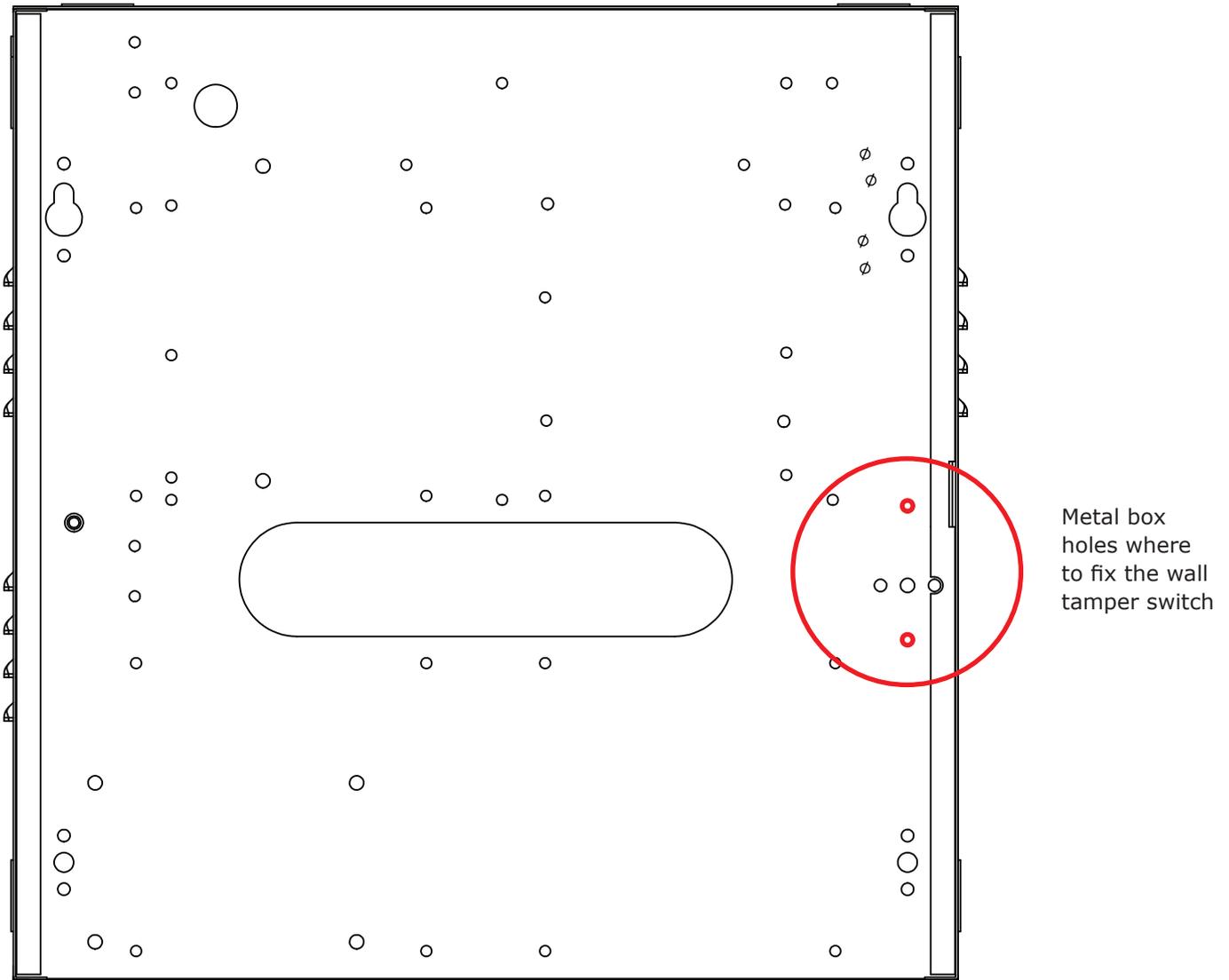
Spacer
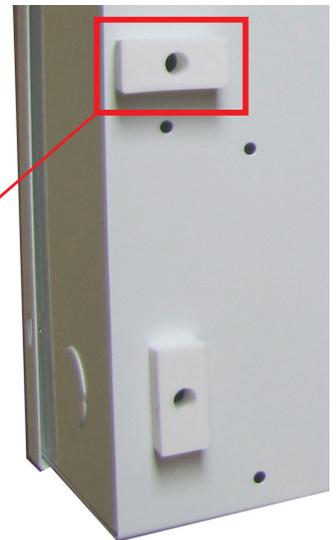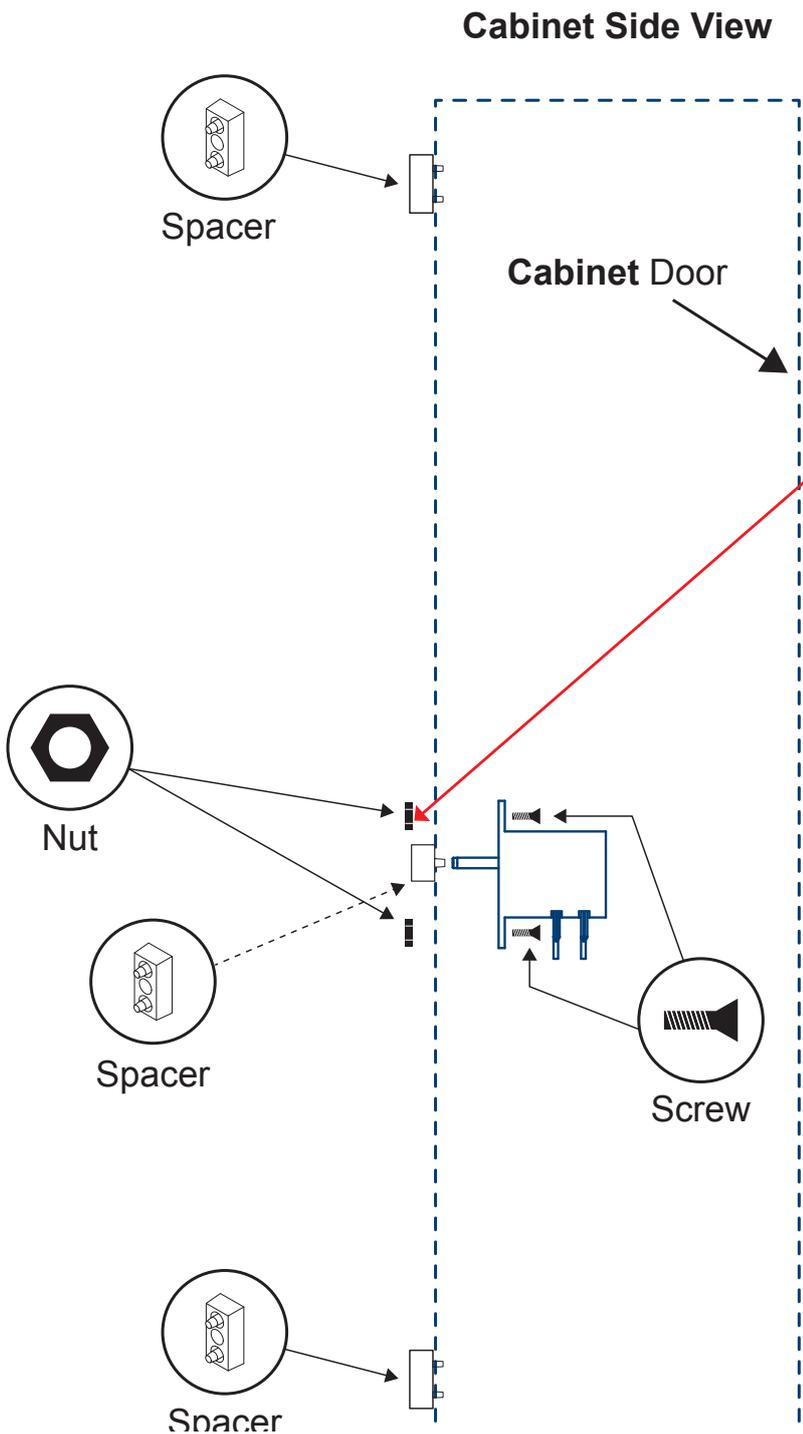
ADH10
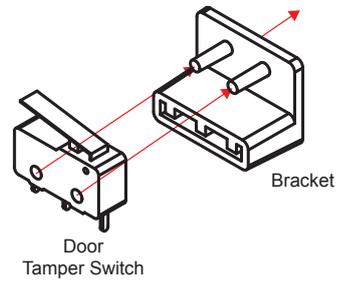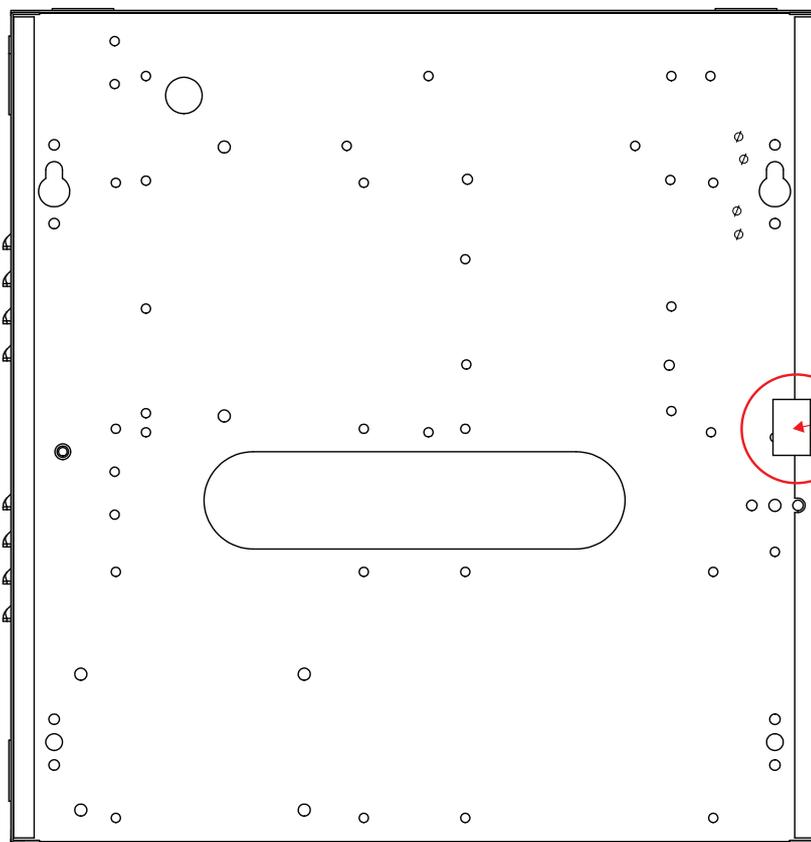## ATRIUM - Schlage Integration Module (Control up to 10 Schlage Door Handles)

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 is mounting flange.

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

Bracket

Door Tamper Switch

Door Tamper Switch Mounting Flange

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 picture (inside view of the door).

1. Remove the box door knock-out.

2. Insert the lock in the hole.

3. Slide the "U" metal bracket into the lock groove as shown in the picture to secure the lock in place.
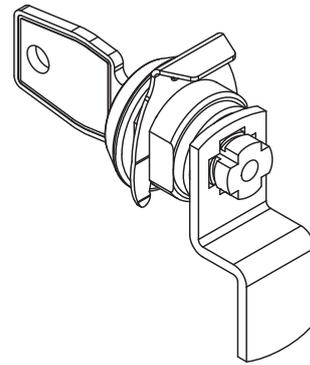
Alternatively or complementary to the box lock,

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 full 10-Door Handle Controller

system is completed.

1. Use the 4 screws supplied to secure

the box cover to its base as shown

in the following picture.
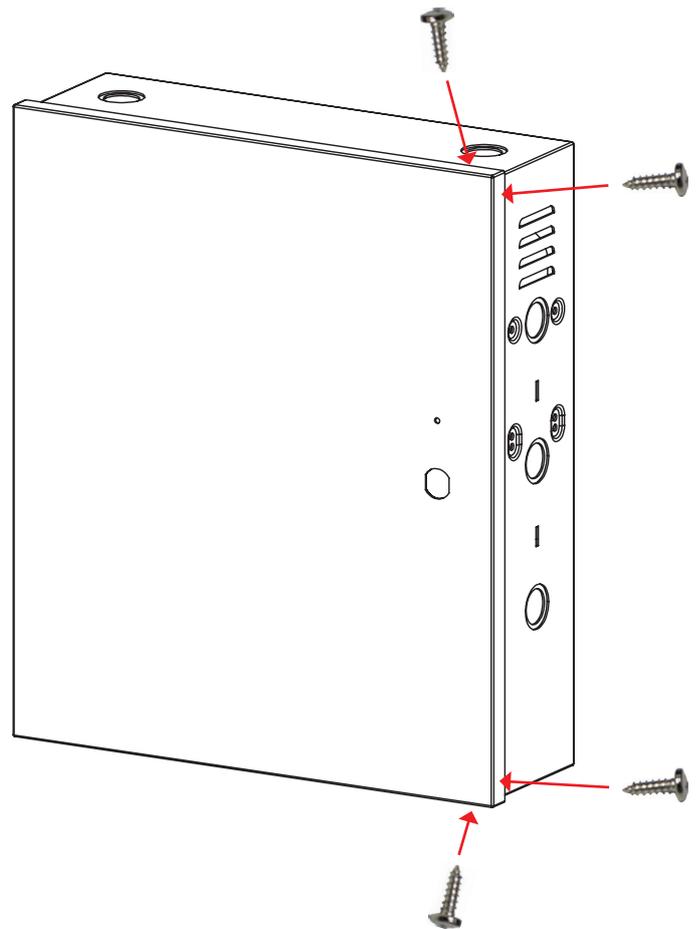
Fixing the Box to its Location

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.

Installing the ADH10 Controller

Install the 5 supplied PCB fasteners in the holes identified in red in the images below.
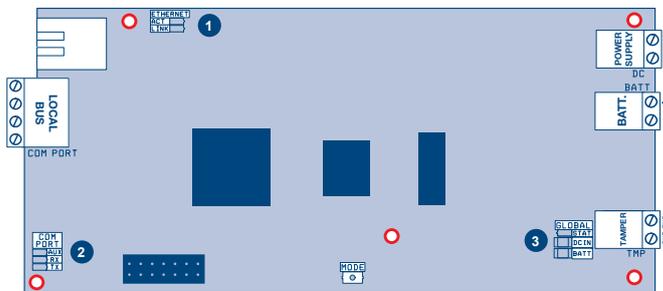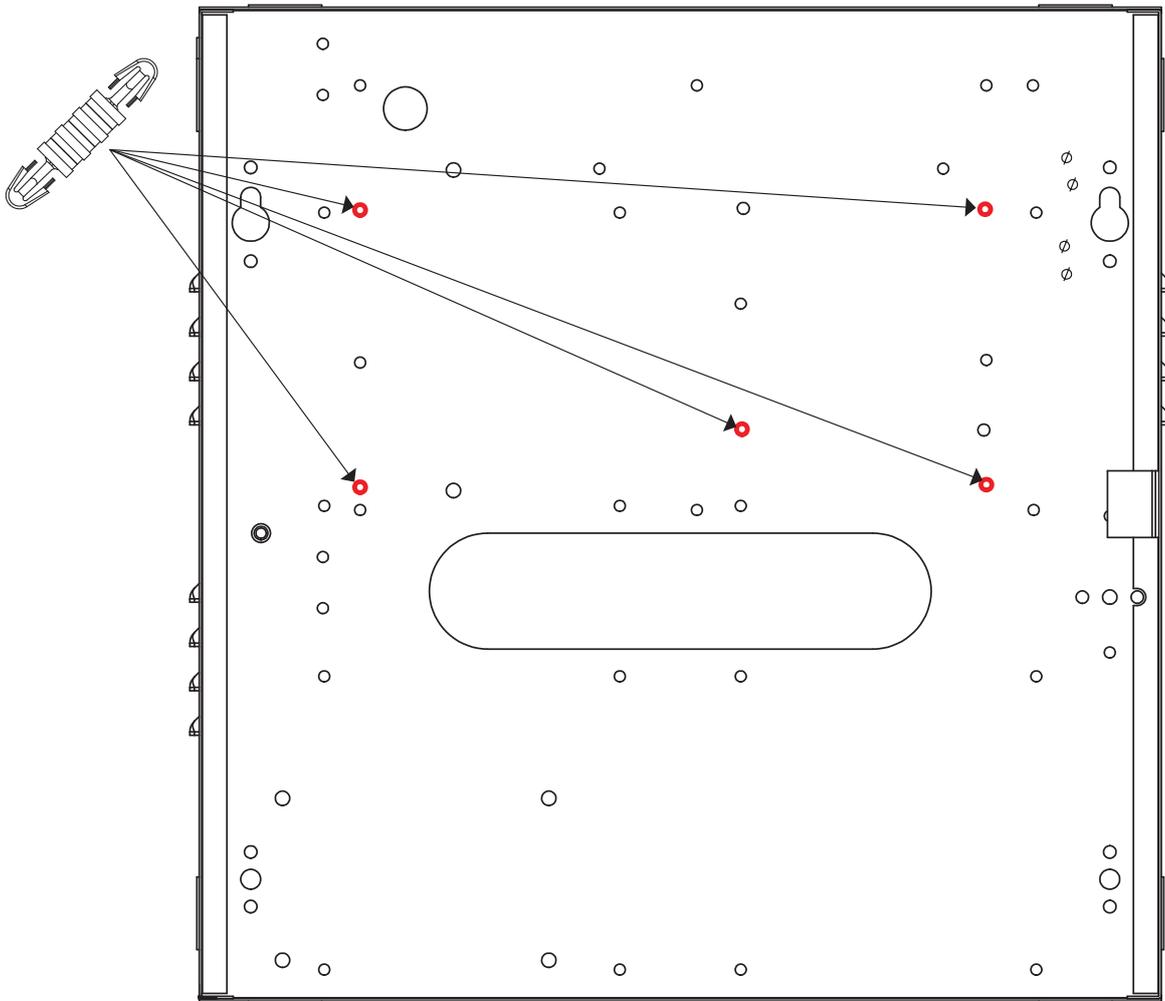
5] WIRING DIAGRAM

Connecting ALLEGION GWE gateway, PIM400-485 or AD-300

Connect ALLEGION GWE gateway, PIM400-485 or AD-300 on a 3 conductor RS485 communication loop in daisy chain or star configuration up to 1220m (4000 ft) from the ATRIUM ADH10 controller.

**GWE
NDE Lock Gateway**

**ADH10
Door Handle Controller**
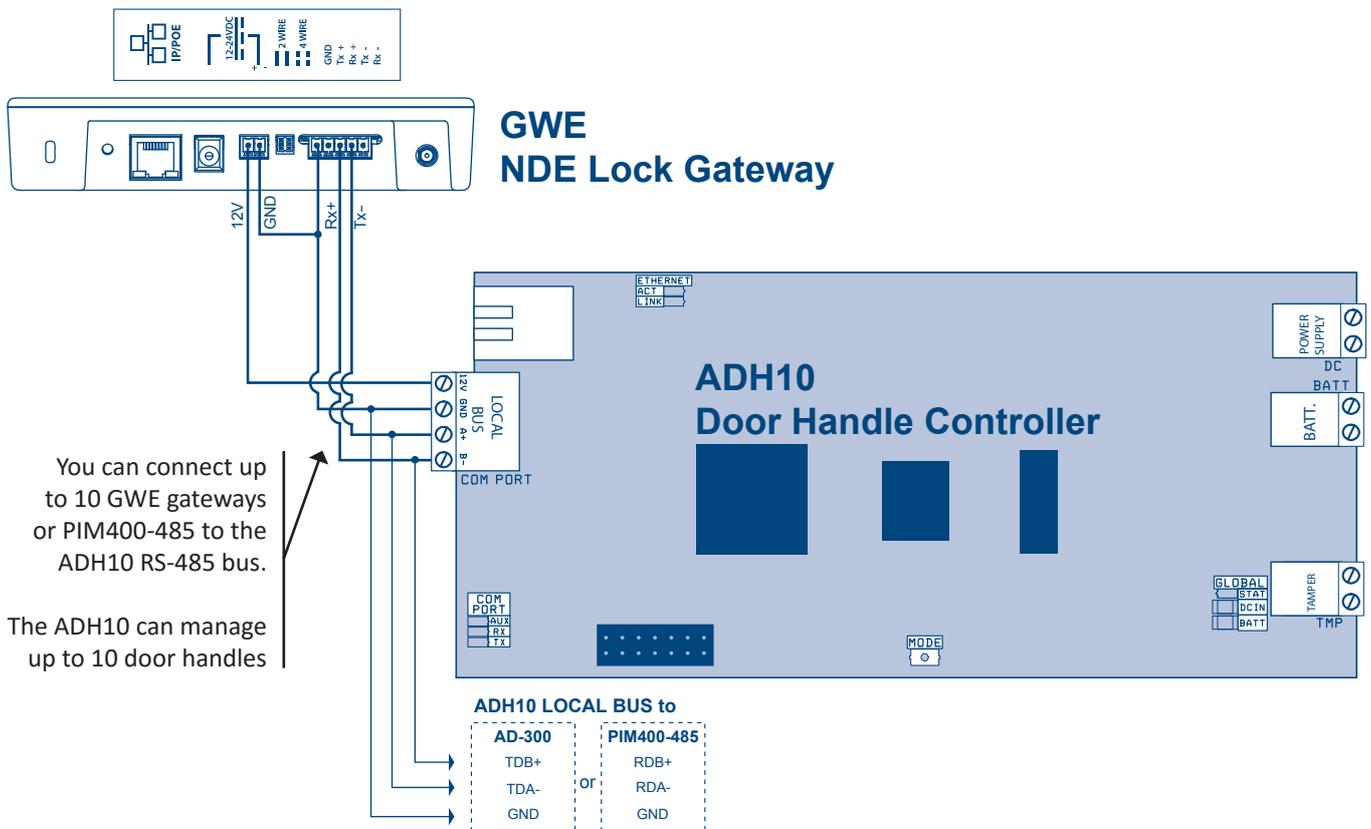
You can connect up to 10 GWE gateways or PIM400-485 to the ADH10 RS-485 bus.

The ADH10 can manage up to 10 door handles

ADH10 LOCAL BUS to

AD-300		PIM400-485
TDB+		RDB+
TDA-	or	RDA-
GND		GND

Once the connection is properly done as shown above, the ATRIUM ADH10 will automatically detect the Allegion GWE gateway, AD-300 or PIM400-485 on power on.

The ADH10 can provide power to up to four GWE Gateways and/or PIM400-485.
Use the supplied GWE transformer to power additional gateways on the same ADH10.

Connecting the Box Tamper Switches

Connecting the tamper switches allows the ADH10 Controller 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 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.
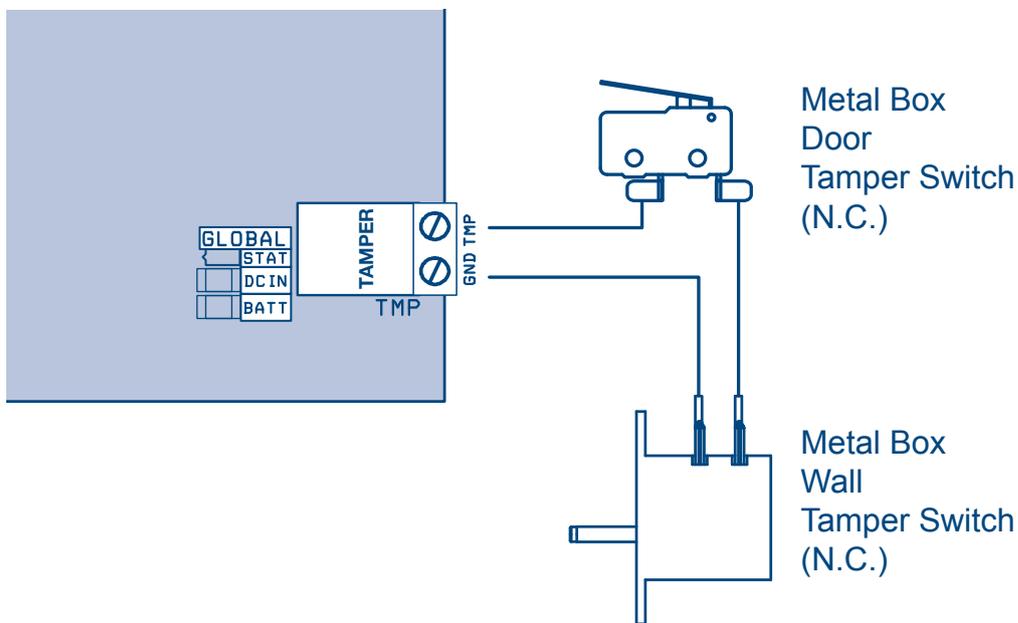
To use only one switch:

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.

Power Connections

⚠️ Do not power up the ADH10 Controller until all connections are completed.

The module operates from any 120/240 Vac sources using the supplied AC/DC power supply and provides fully monitored power solutions using:

- Smart Battery Deep discharge prevention with automatic electronic cut-off.
- Programmable & Adaptive battery charging algorithm (250mA (default), 320mA, 500mA, or 1A).
- Intelligent battery monitoring & charging algorithms allowing optimum performance using standard lead acid batteries.
- Real Time Monitoring algorithm for 'Battery Low/Disconnect/Reversal' and 'Insufficient Main Power'.

AC Source

The AC to DC power supply is pre-installed in the ADH10 Controller box but needs to be connected to the PCB.

1. Connect the AC/DC power supply output cable to the ADH10 Controller DC Power Supply "+" and "-" terminals. The polarity of the wires is identified as shown in the following picture.

Fuse Rating: 250VAC, 2.5 A (-55C to +125C)

Live
Ground
Neutral

Power Supply: Input: 120-240Vac, 1.2A,50Hz/60Hz
Output: 24Vdc @ 2.5A
(Do not connect to a receptacle controlled by a switch).

Red
White

Power Supply LED Indicator

POWER SUPPLY
DC
BATT
BATT.

2. Connect the pre-installed green power LED to the ADH10 Controller DC Power Supply "+" and "-" terminals; in parallel with the AC/DC power supply. The red wire goes on the "+" terminal and the white on the "-" terminal. Make sure that all wires are properly inserted and tightened.
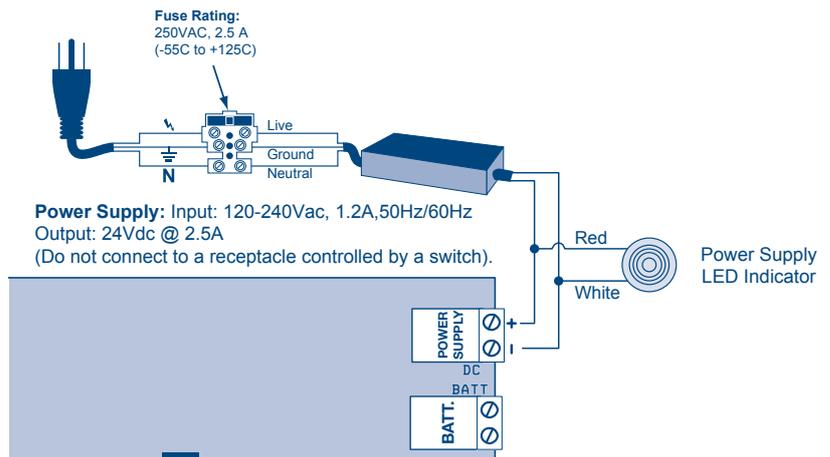
See "Recommended Wiring" chapter for more information on wiring type, size, and maximum length.

📝 The Minimum Size Equipment Conductors for the AC mains required are 14 AWG if made of Copper or 12 AWG if made of Aluminium or Copper-Clad Aluminium. Do not use any switch-controlled outlets to power the system. The system is to be connected to a 15A receptacle or circuit.

⚠️ For PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device shall be incorporated external to the equipment.

⚠️ For PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.

AC Terminal Fuse

⚠️ The following steps are only presented in case you need to replace the AC terminal fuse.

1. Disconnect the AC power cord from the power source or for permanent installation, turn off the power breaker[1].

2. Open the AC compartment at the top left to access the fuse holder.

Fuse holder

3. Pull out the fuse holder.

4. Replace the fuse using the same fuse type:
   250VAC, 2.5 A
   Time Lag, Slow Blow
   Operating Temperature: -55°C to +125°C.
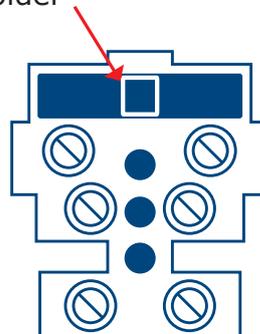
Permitted replacements:
   a) Littelfuse P/N 021802.5MXP
   b) Schurter P/N 0034.3121
   c) Various (means any type, from any manufacturer that complies with the "Technical Data and securement means" and meets the "Mark of conformity" can be used).

5. Replace the fuse holder in its location.

6. Close the AC compartment.

7. Connect the AC power cord to the power source or for permanent installation, turn on the power breaker[1].

📌 [1].For permanent installation, this step must be done by a qualified person in accordance with your local safety regulations.

Battery Backup

The ADH10 Controller cannot be started on battery power only. Battery backup time varies with each system. Typical backup time is between 2 and 20 hours using standard equipment and settings.

Wire a 12Vdc (either 4.5Ah or 7Ah) gel type battery and then connect it to the BATT "+" and "-" terminals with the battery leads supplied.
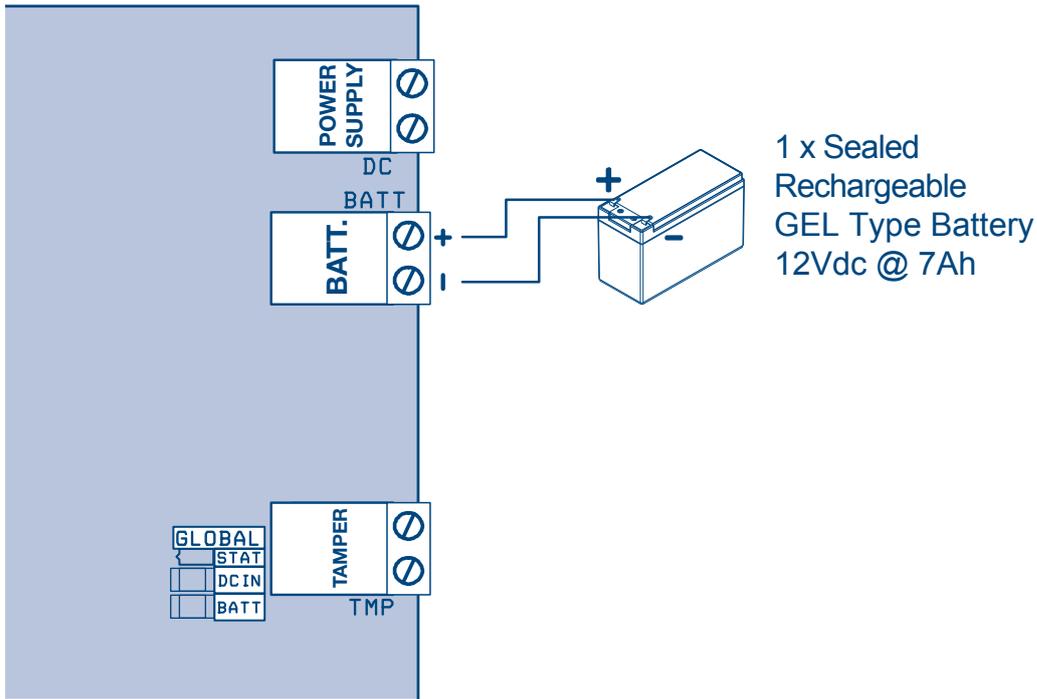
1 x Sealed Rechargeable GEL Type Battery 12Vdc @ 7Ah

12Vdc 7Ah rechargeable acid/lead or gel cell backup battery (UL/ULC: YUASA #NP7-12 recommended, Europe: CDVI B7AH recommended). Ensure proper polarity. Various (means any type, from any manufacturer that complies with the "Technical Data and securement means" and meets the "Mark of conformity" can be used).

The battery charge current can be set to either 250mA (default), 320mA, 500mA, or 1A. Refer to the user interface instruction manual for more information on how to modify the battery charging current.

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LED Indicators

The ADH10 Controller has several status LEDs that are very useful to diagnose problems when using or installing the system. Refer to the following image for the location of the LEDs on the PCB. All LEDs are explained in the following pages.
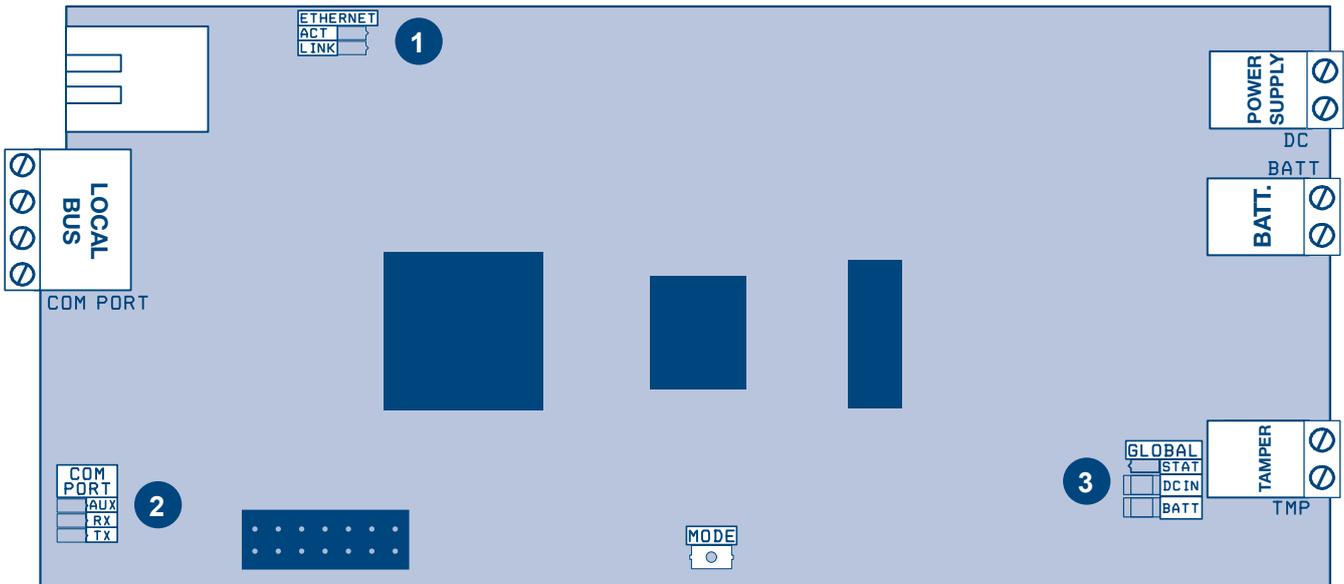
1	ETHERNET	**ACT**: Data transmitted/received (Green LED).
		LINK: Ethernet network detected (Green LED).
2	COM PORT	**AUX**: Green LED, 12 V output power activated.
		RX: Green LED flashing, Data received on local bus.
		TX: Green LED flashing, Data transmitted on local bus.
3	GLOBAL	**STAT**: - One flash per second: Firmware is operating normally. - Rapid flash: Firmware is upgrading. - LED Blink once per 3 second: Card enrollment mode
		DC IN: - Green LED: is powered properly. - Red LED: No primary power.
		BATT: - Green LED: Primary power present and battery charging. - LED Off: Primary power present and battery full. - Red LED: No battery or battery not properly connected. - Flashing Red LED: Battery power is below 11.8VDC.

ADH10
ATRIUM - Schlage Integration Module (Control up to 10 Schlage Door Handles)

System overview

One ATRIUM ADH10 controller has the capacity to control ten AD300 and/or AD400 SCHLAGE door handles. ATRIUM ver. 3.1 (or higher) multi-account software supports up to 100 door handles per account (site). For increased flexibility, the system also supports proximity or magnetic stripe card readers. Combine AD300/400 door handles and card readers on the same system as shown in the diagram below.

LAN/WAN (TCP/IP)

WiFi

Tablets

Smartphone

ADH10
Door Handle Controller

(Can manage up to ten door handle locks)

RS485

AD-300
Wired Lock

900MHz

AD-400
Wireless Lock

Range up to 200' in typical building construction

PIM400-485
Panel Interface Module

Bluetooth Low Energy

NDE
Wireless Lock

Range up to 100' in typical building construction

GWE
Gateway

ATRIUM
ACCESS CONTROL

Supports any combination of ten A22 and/or ADH10 controllers for a maximum of 100 card readers or door handles per site.

Each **PIM400-485 or GWE can** manage up to ten locks. ADH10 can manage up to ten **PIM400-485 and/or GWE.** **(ADH10 firmware version 3.3 or higher)**

A22
Web-Based IP 2-Door Hybrid Controller
Can manage up to ten card readers
(A22 set as a controller)

A22
Set as Expander

A22
Set as Expander

A22
Set as Expander

A22
Set as Expander

RS485

Proximity Card Reader

Proximity Card Reader

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.

NOT COVERED BY THE "5 YEAR WARRANTY":

- Any product which has undergone even the slightest modification or change;
- Any product which has been installed and/or used with any auxiliary device not supplied by CDVI;
- Any product which has been used for demonstrations or display;
- Any product or its elements considered as "consumables" such as fuses, lights and batteries for example;
- Failure or malfunctioning as a result of an accident, poor storage conditions, unsuitable assembly, bad utilization or handling, poor maintenance, unsuitable repair or intervention.
- Any call-out and installation fees (for assembly and dismantling) as well as transport costs (to and from the repair centre) and maintenance fees.

THE INSTALLER'S RESPONSIBILITIES:

When registering the 5 Year Warranty on line, the installer is responsible for the information supplied. In case of errors, the 5 Year Warranty will not be applicable.

NOTES:

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