

Intelligent Building Solutions

Installation Manual



CAP 2020 DR H ACCESS CONTROL UNIT (for hotel management systems)

- Proximity card based
- DIN-rail mounting

CIB-tech

Introduction

The CAP 2020 DR H is a proximity card based access control device, with hotel room economizer function, part of the CIB-tech automation system.

The unit can control the entry in a hotel room. It accepts up to 1024 users and provides entry via the use of proximity cards. It can control the power supplied to the room, based on the state of the room's proximity card holder.

Additional Equipment Required

1. Functional CIB-tech system

A minimal number of essential CIB-tech components to make a functional CIB-tech system¹.

2. Proximity card and/or PIN code reader with bell button, for entry request

A proximity card reader with a 26-bit Wiegand-type output, further referred to as "Reader A"².

NOTE: The proximity card reader must supply the bell button event in Wiegand data format.

3. Proximity card holder

Proximity card holder with built in proximity card reader (ex IBS product RFE 10 F), or any simple, contact based card holder with voltage free contacts², further referred to as "Smart card holder" or "Simple card holder".

4. Open door sensor (optional)

Normally open or normally closed type with voltage free contacts².

5. Electric door lock

Fail safe (power to lock) or fail secure (power to open) strike lock/door bolt/magnetic lock².

6. Power supply for electric door lock

Refer to the electric door lock's characteristics to choose a suitable power supply. A power supply with battery backup is recommended.

7. Circuit breaker

Miniature circuit breaker (MCB) or DIN-Rail mountable fuse must be used for over-current protection.

Technical Specifications

Electrical characteristics

● Power Supply

The CAP 2020 DR H functions as a node in a CIB-tech system, being powered from the CIB-tech system's power supply via the CIB-tech connectors.

- Operating voltage range: 20 to 28V DC (nominal 24V DC)
- Supply current
 - Standby current (without reader/card holder): 22mA
 - Maximum current (without reader/card holder): 50mA
 - Typical standby current (with reader and card holder): 110mA
 - Absolute maximum current (with reader and card holder): 300mA

● Power output

The CAP 2020 DR H can provide power to the proximity card reader and card holder.

- Output voltage: 12V DC

¹ See "CIB-tech installation manual" for details.

² See "Recommended equipment to be used with CIB-tech" for details

- Maximum output current: 2 x 170mA
- **Relay output (for electric door lock)**
If an electric door lock with a DC power supply is used, an external suppressor diode must be used³.
 - Rated voltage: 24V AC/DC
 - Rated current: 2A
- **Relay output (for room power)**
 - Rated AC voltage: 250V AC
 - Rated current: 16A
- **Signal Input**
 - Wiegand data input:
 - supported input voltage levels: 0 - 5V
 - input impedance: 1KOhm
 - Open door sensor: N.O. or N.C. with voltage free contacts
 - Contact based card holder: N.O. with voltage free contacts
- **Signal Output**
 - External LED control:
 - output voltage levels: 0 - 5V
 - output current: 15mA

Mechanical characteristics

The CAP 2020 DR H has a standard 3-module wide enclosure for M36 type DIN-Rail

- Dimensions: 96mm W x 52mm L x 60mm D
- Weight: 130g

Environmental characteristics

- Operating temperature: 0°C to 65°C
- Storage temperature: -10°C to 70°C

Key Features

- Programmable via the CIB-tech system with dedicated software
- Controls unidirectional access through one door
- Provides access for up to 1024 users
- Users may be members of one of up to 30 groups with different access rights, based on a weekly schedule. Groups have individual access right expiration dates
- Controls the power supply for one hotel room.
- Room power is automatically enabled when a valid entry request is detected.
- Programmable "keep room power on" time, after card is removed from the card holder.
- Support for Simple card holder (any card may be placed in the holder and the room will be powered on) and Smart card holder (the room will be powered on only if a valid proximity card is placed in the RFE 10 F).
- Support for an open-door sensor input for detecting actual door openings.
- Internal battery powered real-time clock. Clock keeps running in case of power failure
- Internally stored 1024-entry access log with time stamps
- Internally stored 1024-entry open door event log with time stamps

³ IBS product PS 1213 D is a dedicated power supply for door locks: 12V AC and DC output, internal suppressor diode. Note that battery backup for door lock is not possible with it.
Please verify whether it is suitable for your door lock!

- Configurable relay output; normal-open or normal-closed (in power-off state relay contacts are always open)
- Two functional modes: open door momentarily or toggle door state
- Configurable keep-door-open time for the momentary-open mode
- Relay outputs are remotely controllable via the CIB-tech system
- Internal bi-color LED indicating the state of the door lock (green: closed / red: open)
- Support for two external LEDs (for reader A and card holder) indicating a valid proximity card;

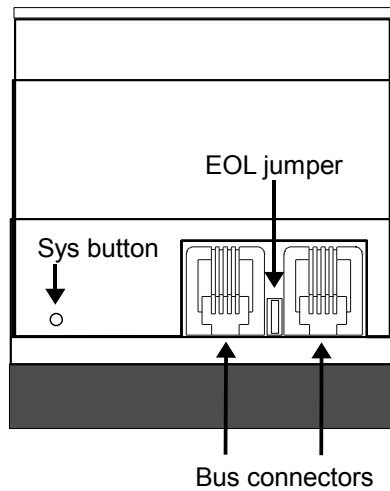
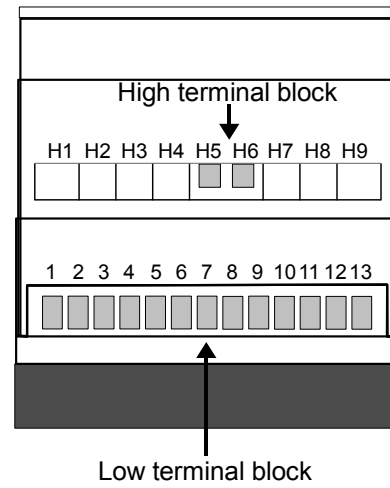
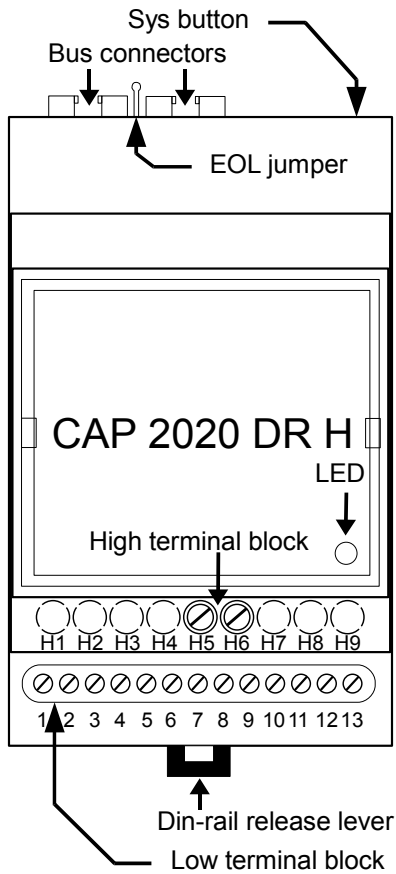
Installation

The CAP 2020 DR H is meant to be installed on a standard M36 type DIN-Rail.

Part description

- **Bus connectors:**
 - 4P4C modular jack connectors for CIB-tech connection¹
- **Sys button:**
 - pushbutton for CIB-tech system configuration
- **EOL jumper:**
 - CIB-tech system's End Of Line jumper¹
- **LED:**
 - indicator LED for door lock state (green : closed / red : open)
- **DIN-rail release:**
 - lever for removing the device from the M36 DIN-Rail
- **Low terminal block:** terminals for connecting external devices
 1. Smart card holder – LED control
 2. Smart card holder – Wiegand data 1
 3. Smart card holder – Wiegand data 0 / Simple card holder N.O. contact
 4. Smart card holder – DC power supply +12V
 5. Smart card holder – DC power supply ground / Simple card holder common contact
 6. Reader A – LED control;
 7. Reader A – Wiegand data 1
 8. Reader A – Wiegand data 0
 9. Reader A – DC power supply +12V
 10. Reader A – DC power supply ground
 11. Open-door sensor input
 12. Relay contact 1 for electronic door lock
 13. Relay contact 2 for electronic door lock
- **High terminal block:** terminals for connecting external door bell
 - H5. Relay contact 1 for room power
 - H6. Relay contact 2 for room power

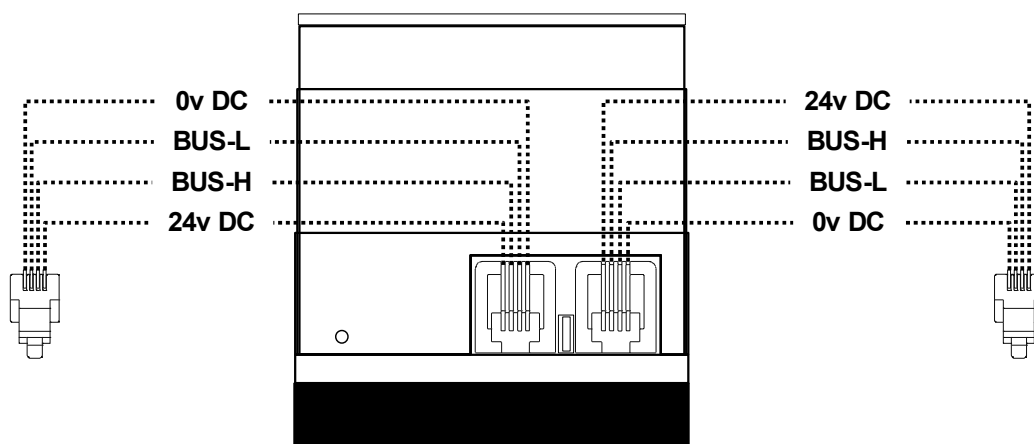
¹ See “CIB-tech installation manual” for details.



Wiring diagrams

Connection to CIB-tech system:

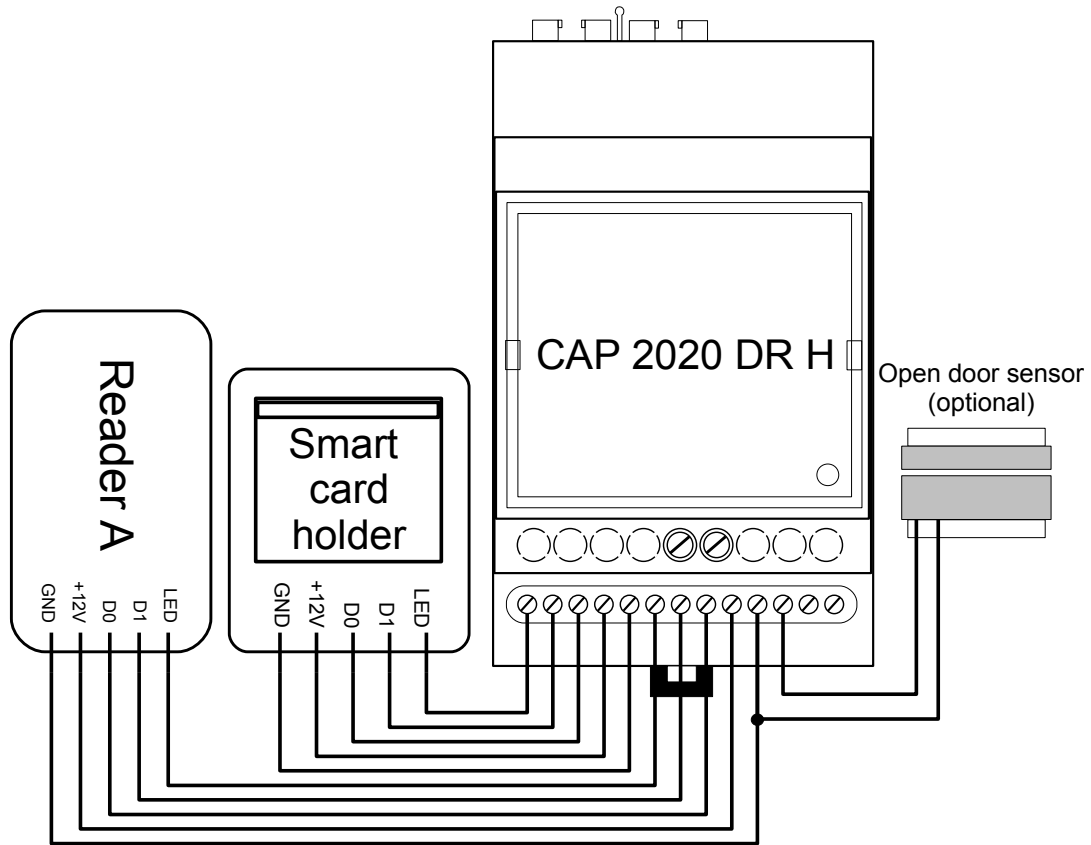
Use the CAP 2020 DR H device's two 4P4C modular jack connectors to connect it to the CIB-tech systems (chain like) bus. Do not forget to remove the EOL jumper if the device is not the last element of the chain¹



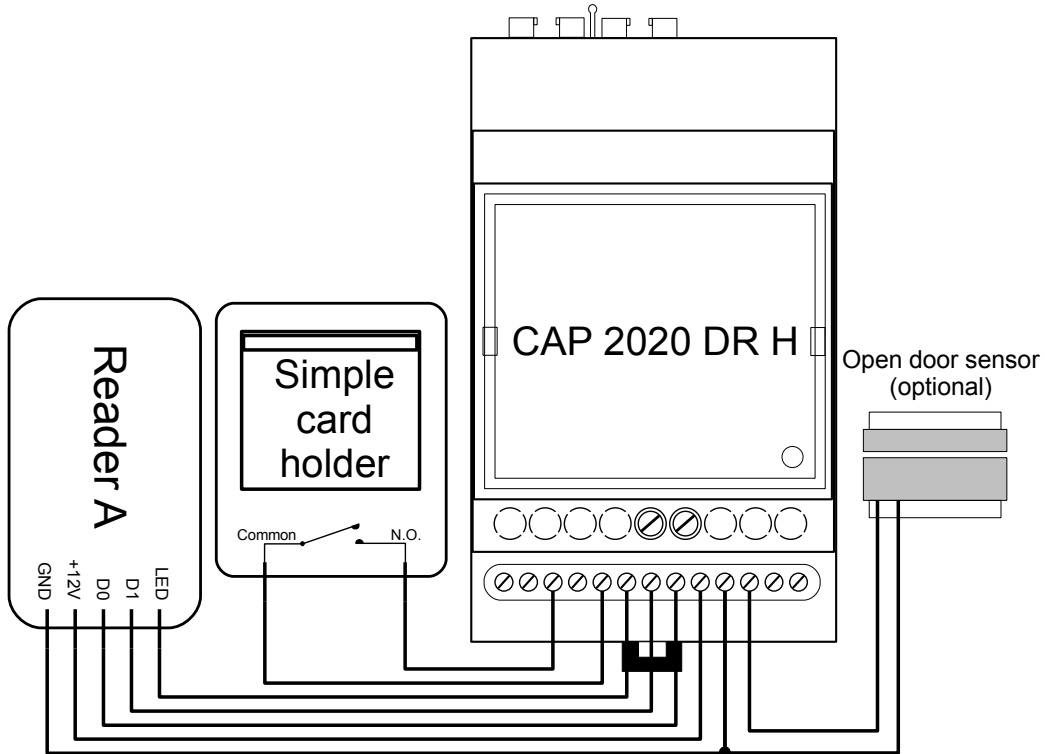
¹ See "CIB-tech installation manual" for details.

Connecting the input devices

Connection example for proximity card reader and Smart card holder:



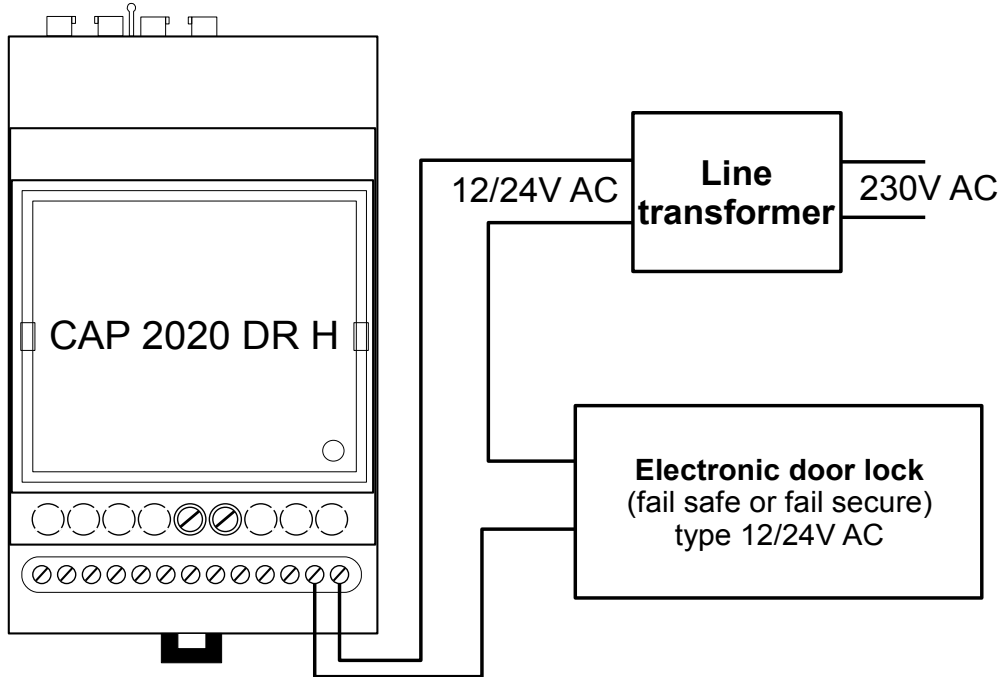
Connection example for proximity card reader and Simple card holder:



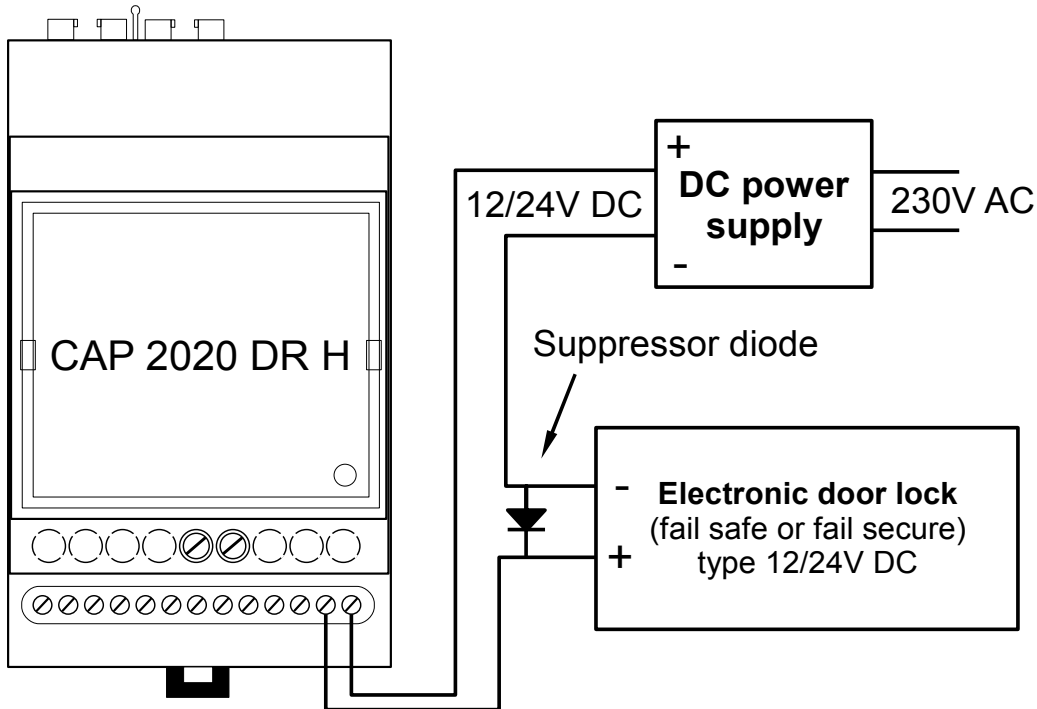
NOTE: Some proximity card readers don't have a LED control input. For these readers the LED control output of the CAP 2020 DR H is not connected.
 Some proximity card readers have auxiliary inputs and outputs (ex. tamper, auxiliary led). These auxiliary inputs and outputs can not be connected to the CAP 2020 DR H.

Connecting the electronic door lock

Connection example for AC-type electronic door lock:

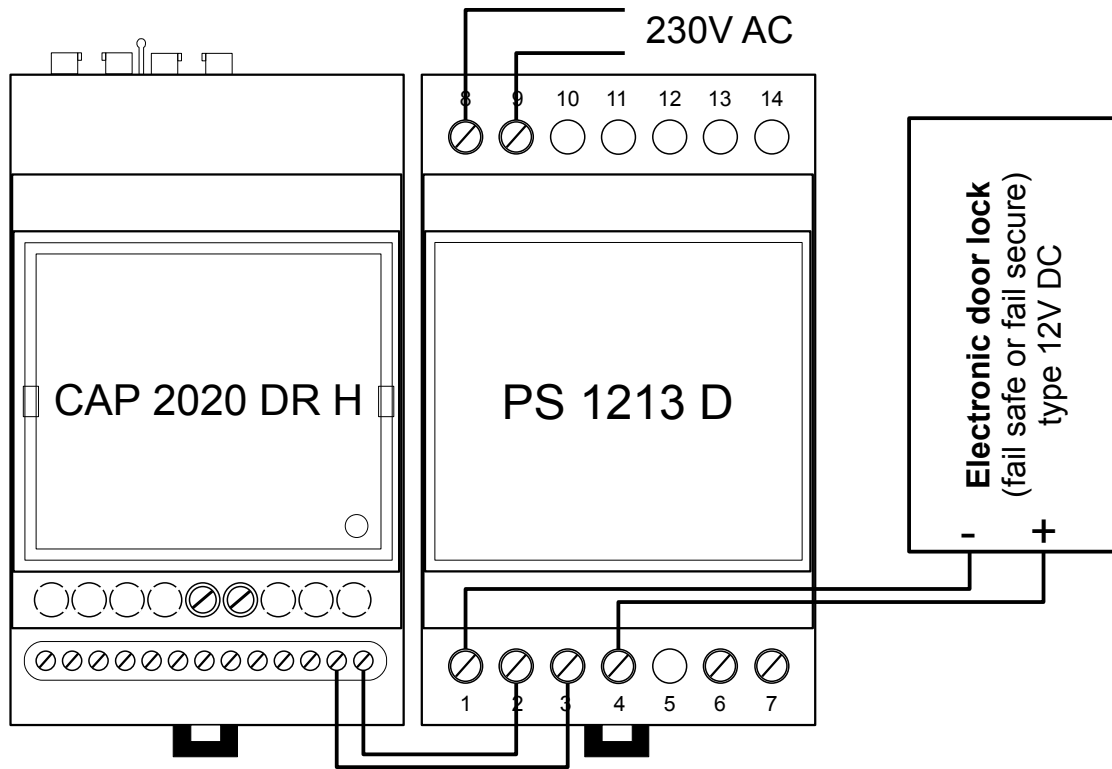


Connection example for DC-type electronic door lock:

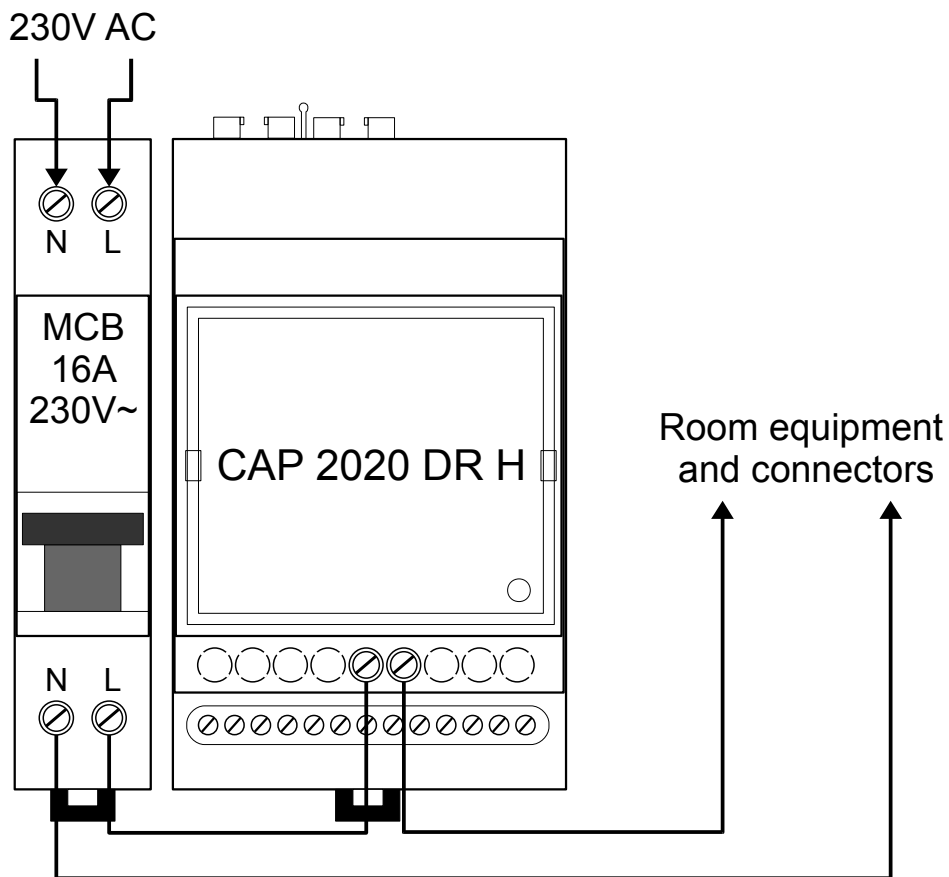


NOTE: An external suppressor diode (ex. 1N4001) is required.

Connection example for DC-type electronic door lock and PS1213D, dedicated power supply :



Connecting the room power control



NOTE: A max. 16A Miniature Circuit Breaker (MCB) or max. 16A fuse must be connected in series with the CAP 2020 DR H's room power relay.

Document Version 1.0

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