

Intelligent Building Solutions

Installation Manual



CAP 2020 DR EB ACCESS CONTROL UNIT (with external bell)

- Proximity card & pin code
- DIN-rail mounting

CIB-tech

The CAP 2020 DR EB is a proximity card and/or keypad based access control device, with bell control output, part of the CIB-tech automation system.

The unit can control bi-directional access through one door. It accepts up to 1024 users and provides entry via the use of proximity cards and/or PIN codes. It can control a bell that is connected to it, based on the bell button event of a proximity card reader with a bell button.

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 and/or PIN code 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. Request to Exit (REX) button or proximity card and/or PIN code reader for exit request (optional)

Either a proximity card and/or PIN code reader with a 26-bit Wiegand-type output, further referred to as "Reader B", or a normally-open type (contact is closed when button is pressed) REX button can be used as a request-to-exit device².

4. Open door sensor (optional)

Normally open or normally closed type with voltage free contacts ².

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. Door bell

Electric door bell with the preferred ring tone.

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

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

Electrical characteristics

- **Power Supply**

The CAP 2020 DR EB 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 readers attached): 22mA
 - Maximum current (without readers attached): 50mA
 - Typical standby current (with two readers attached): 140mA
 - Absolute maximum current (with two readers attached): 300mA

- **Power output**

The CAP 2020 DR EB can provide power to the proximity card and/or PIN code readers.

- Output voltage: 12V DC
- 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 used¹.

- Rated voltage: 24V AC/DC
- Rated current: 2A

- **Relay output (for electric door bell)**

- Rated AC voltage: 250V AC
- Rated DC voltage: 24V DC
- Rated current: 8A

- **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
- REX button: 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 EB 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

¹ 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!

Key Features

- Programmable via the CIB-tech system with dedicated software
- Controls unidirectional or bi-directional access through one door
- Controls external door bell for entry requests
- 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
- Support for a REX button, or proximity card and/or PIN code reader for exit request
- 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
- 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 reader B) indicating a valid proximity card or PIN code

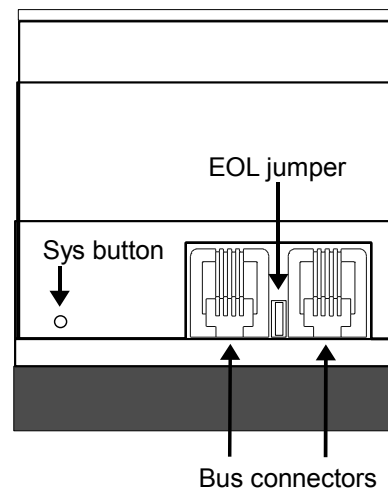
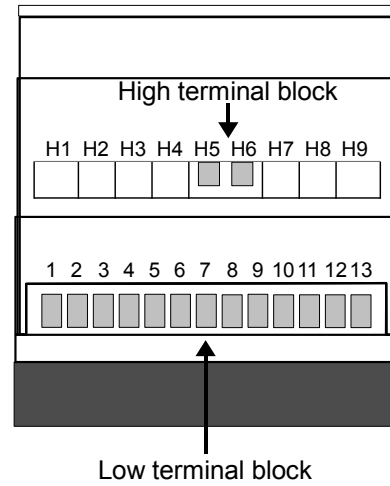
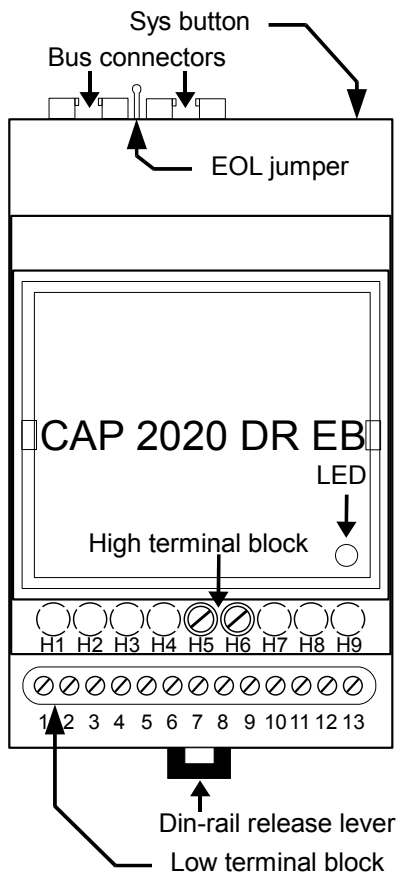
Installation

The CAP 2020 DR EB 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. Reader B – LED control
 2. Reader B – Wiegand data 1
 3. Reader B – Wiegand data 0 / REX input
 4. Reader B – DC power supply +12V
 5. Reader B – DC power supply ground
 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 door bell
 - H6. Relay contact 2 for door bell

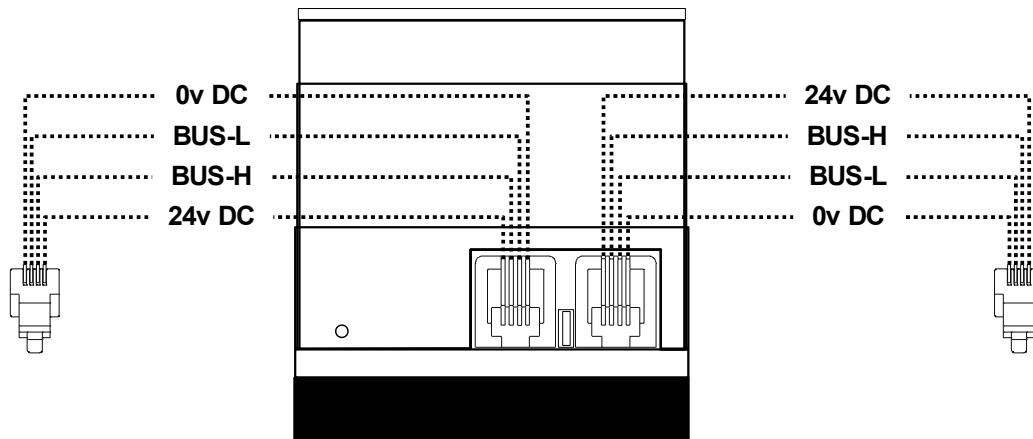
¹ See “CIB-tech installation manual” for details.



Wiring diagrams

Connection to CIB-tech system:

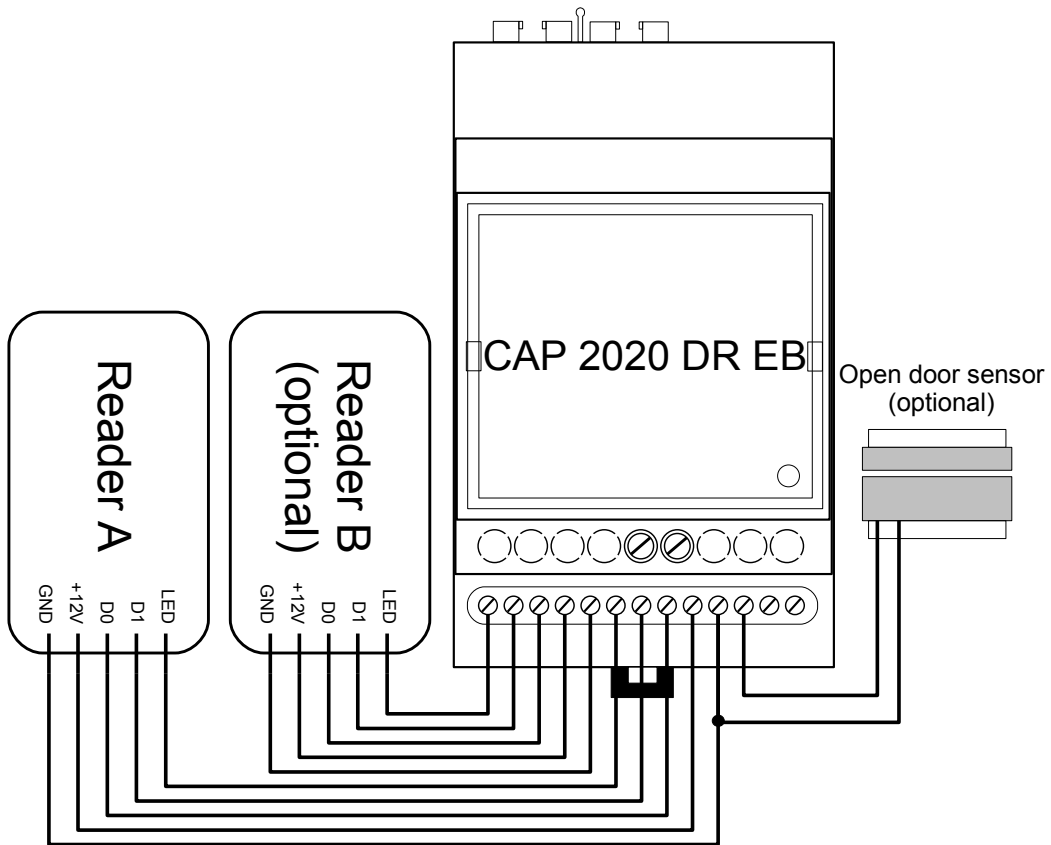
Use the CAP 2020 DR EB device's two 4P4C modular jack connectors to connect it to the CIB-tech systems (chain like) bus. Do not forget to remove the EOL jumper if the device is not the last element of the chain¹:



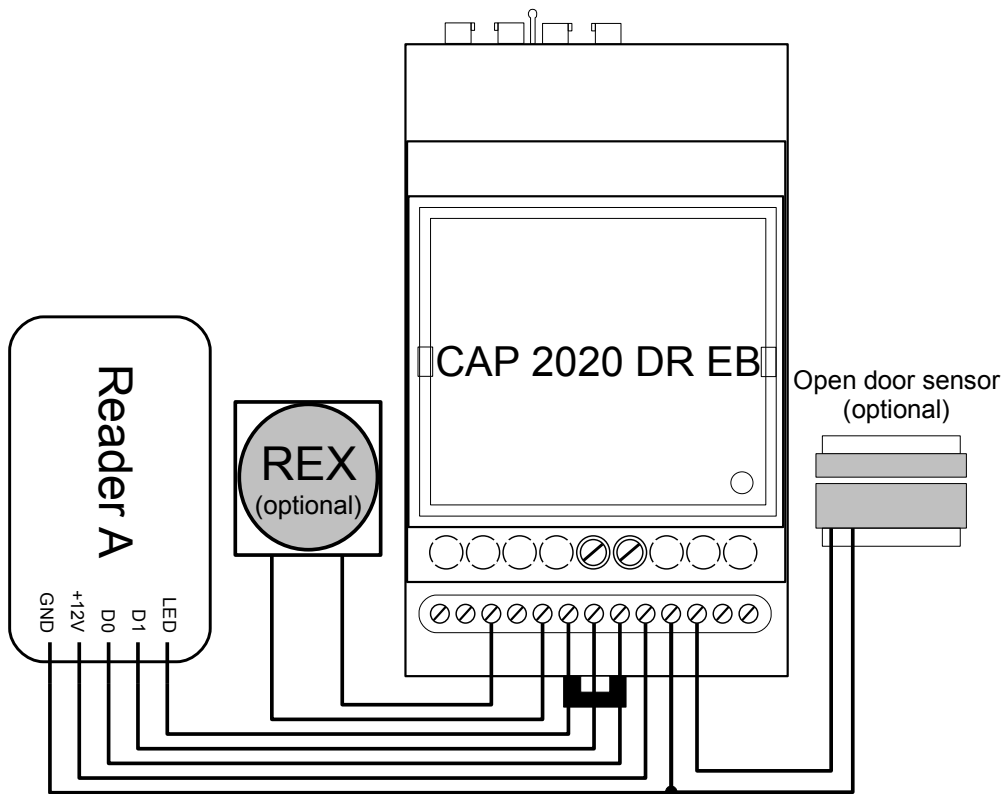
¹ See "CIB-tech installation manual" for details.

Connecting the input devices

Connection example for two proximity card / PIN reader:



Connection example for one proximity card / PIN reader and REX button:

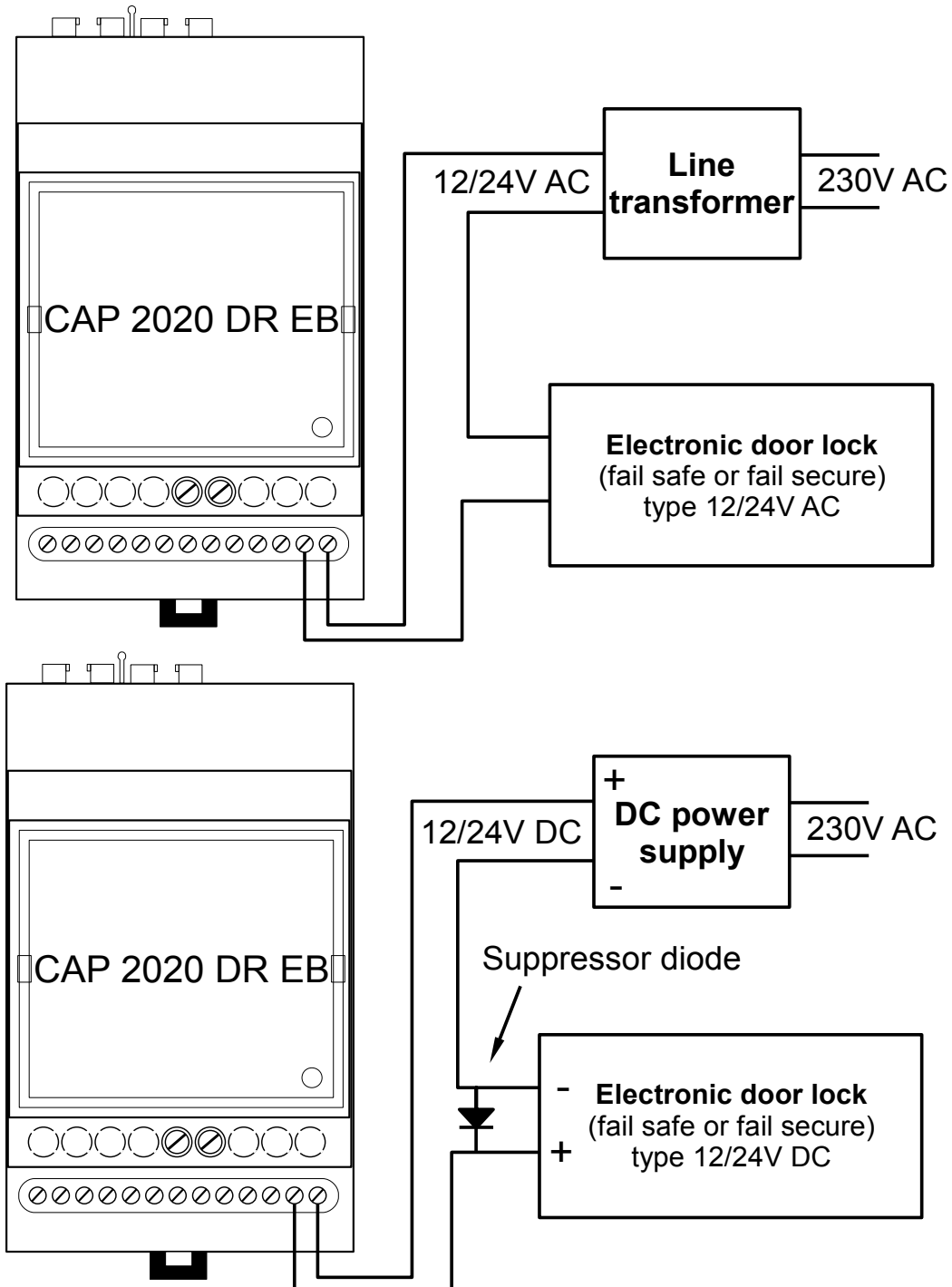


NOTE: Some proximity card / PIN readers don't have a LED control input. For these readers the LED control output of the CAP 2020 DR EB is not connected.

Some proximity card / PIN readers have auxiliary inputs and outputs (ex. tamper, auxiliary led). These auxiliary inputs and outputs can not be connected to the CAP 2020 DR EB.

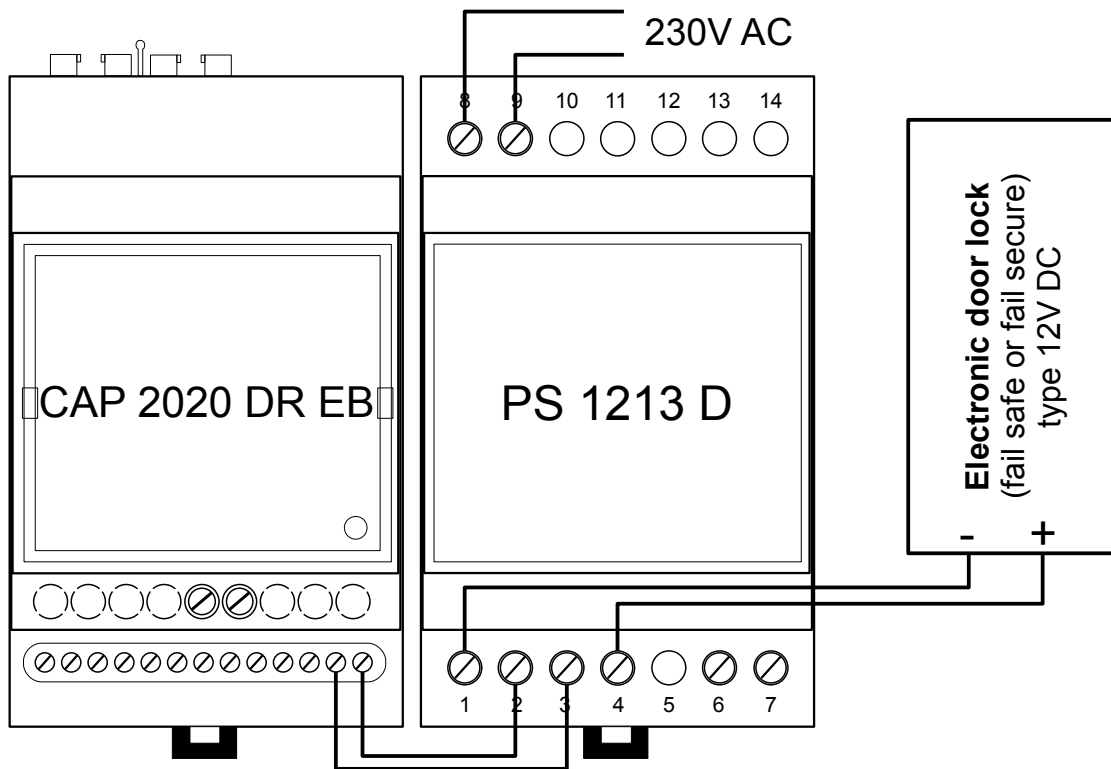
Connecting the electronic door lock

Connection example for AC-type and DC-type electronic door lock:

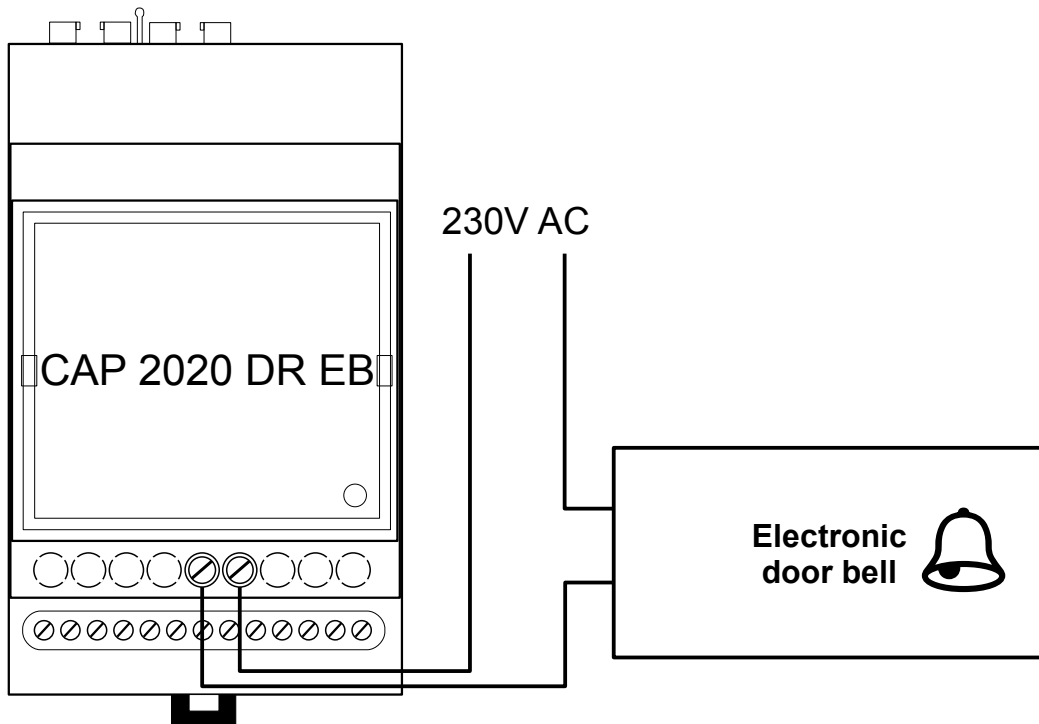


NOTE: An external suppressor diode (ex. 1N4001) is required.

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



Connecting the electronic door bell



Technical Support:
<http://www.ibs-smarthouse.com/>
info@ibs-smarthouse.com

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