

# Intelligent Building Solutions

## Installation Manual



### CAP 200 DR ACCESS CONTROL UNIT

- Proximity card & pin code
- Din-rail mounting

**CIB-tech**

## Introduction

The CAP 2020 DR is a proximity card and/or keypad based access control device which is 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.

### Additional Equipment Required

**1. Functional CIB-tech system**

A minimal number of essential CIB-tech components to make a functional CIB-tech system<sup>1</sup>

**2. Proximity card and/or PIN code reader for entry request**

A proximity card and/or PIN code reader with a 26-bit Wiegand-type output, further referred to as "Reader A"<sup>2</sup>.

**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 device<sup>2</sup>.

**4. Open door sensor (optional)**

Normally open or normally closed type with voltage free contacts<sup>2</sup>.

**5. Electric door lock**

Fail safe (power to lock) or fail secure (power to open) strike lock/door bolt/magnetic lock<sup>2</sup>.

**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.

## Technical Specifications

### Electrical characteristics

● **Power Supply**

The CAP 2020 DR 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 (typical 24V DC)
- Input 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 can provide power to the proximity card and/or PIN code readers.

- Output voltage: 12V DC
- Maximum output current: 2 x 170mA

<sup>1</sup> See "CIB-tech installation manual" for details.

<sup>2</sup> See "Recommended equipment to be used with CIB-tech" for details

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

If an electric door lock with a DC power supply is used, an external suppressor diode must be used<sup>3</sup>.

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

- **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 has a standard 3-module enclosure for M36 type DIN-Rail

- Dimensions: 96mm W x 52mm L x 60mm D
- Weight: 105g

## 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 uni-directional or bi-directional 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
- Support for a REX button, or proximity card and/or PIN cod 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 output 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

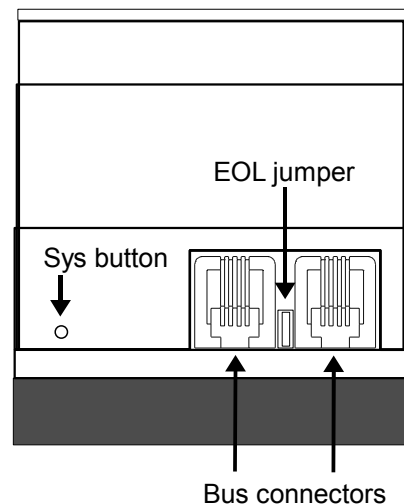
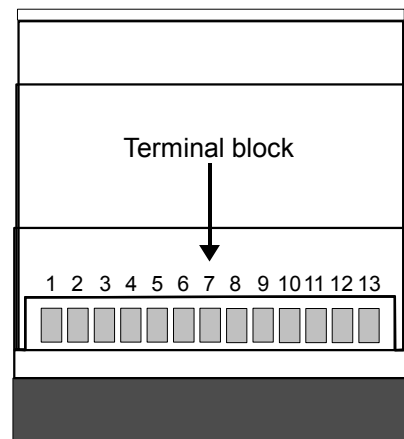
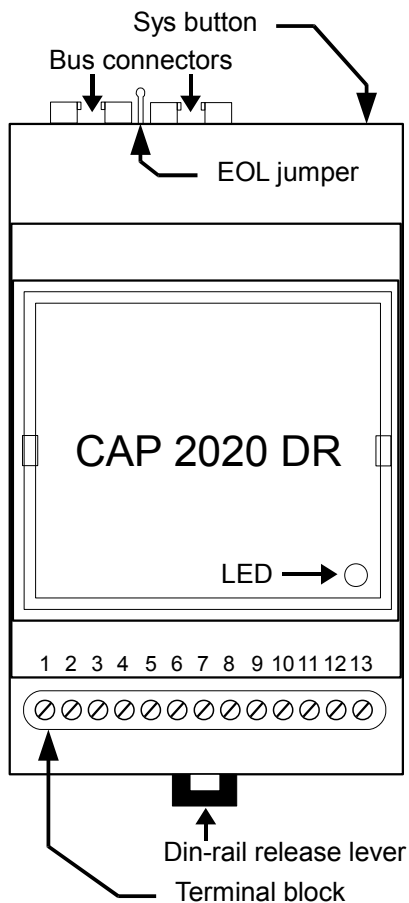
<sup>3</sup> IBS product PS 1213 D is a dedicated power supply for door locks: 12V AC and DC output, internal suppressor diode. Note that battery backup for door lock is not possible with it.  
Please verify whether it is suitable for your door lock!

# Installation

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

## Part description

- **Bus connectors:**
  - 4P4C modular jack connectors for CIB-tech connection <sup>1</sup>
- **Sys button:**
  - pushbutton for CIB-tech system configuration
- **EOL jumper:**
  - CIB-tech system's End Of Line jumper<sup>1</sup>
- **LED:** indicator LED for door lock state
  - green: closed / red: open
- **Din-rail release lever:** lever for removing the device from the M36 DIN-Rail
- **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
  13. Relay contact 2

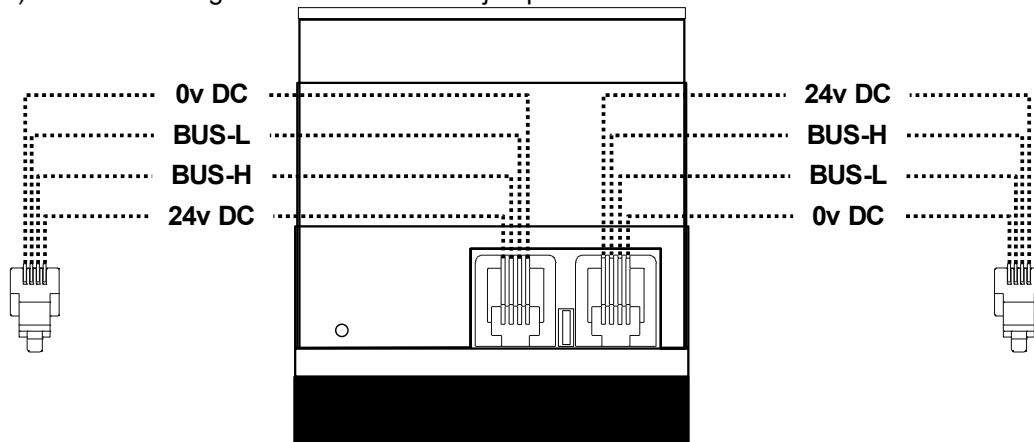


<sup>1</sup> See "CIB-tech installation manual" for details.

## Wiring diagrams

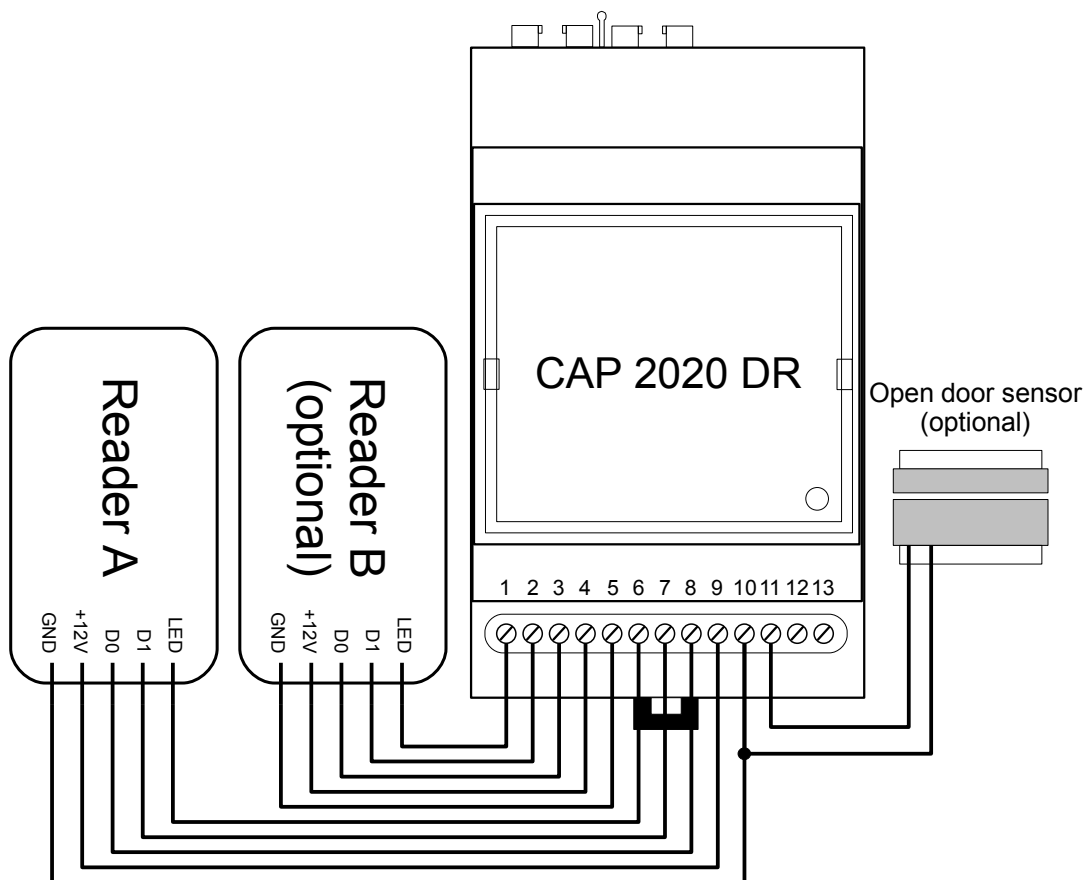
### Connection to CIB-tech system:

Use the CAP 2020 DR 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 chain<sup>1</sup>:



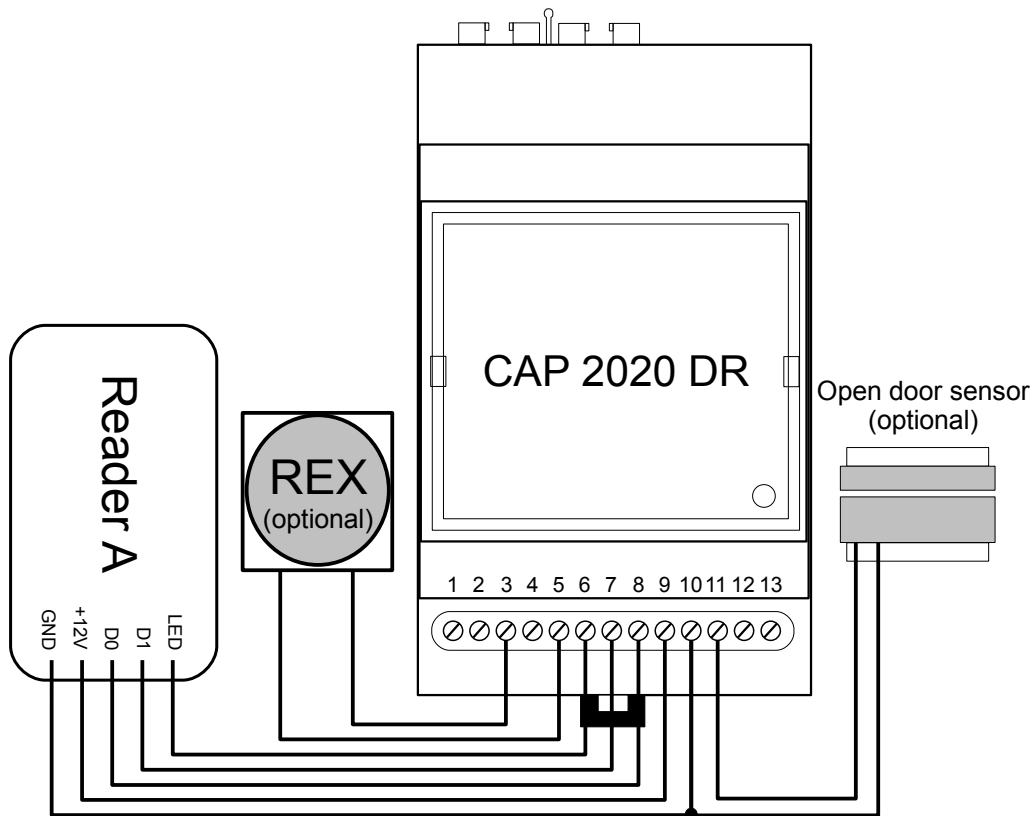
### Connecting the input devices

Connection example for two proximity card / PIN reader:



<sup>1</sup> See "CIB-tech installation manual" for details.

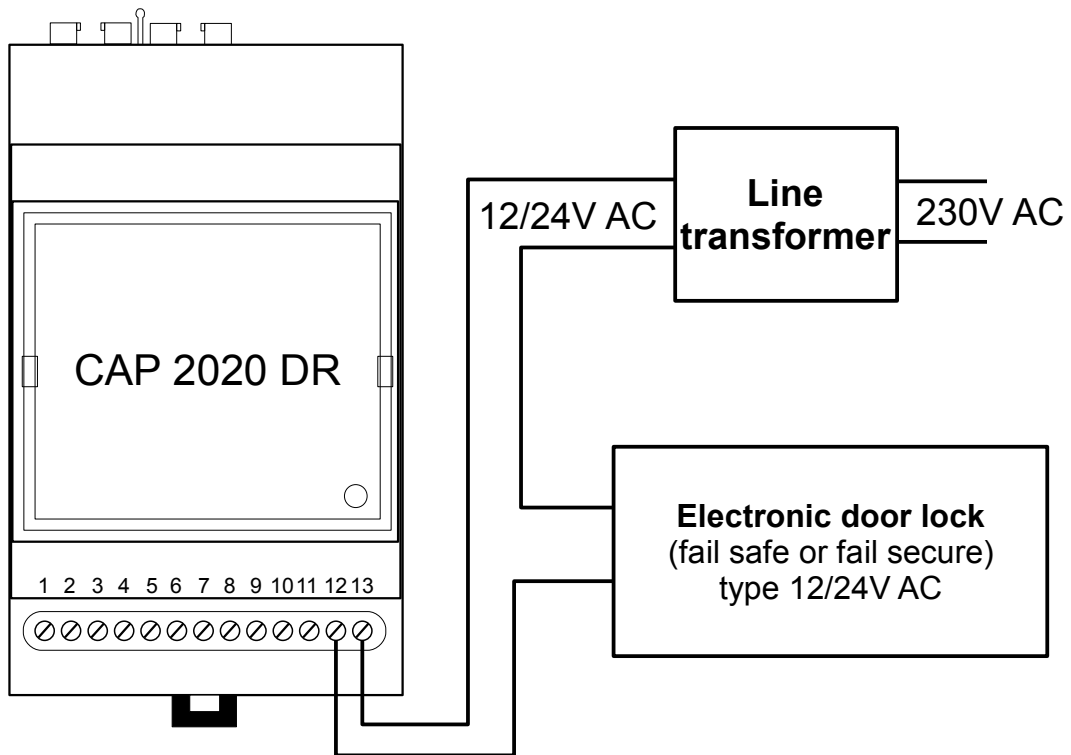
Connection example for one proximity card / PIN reader and REX button:



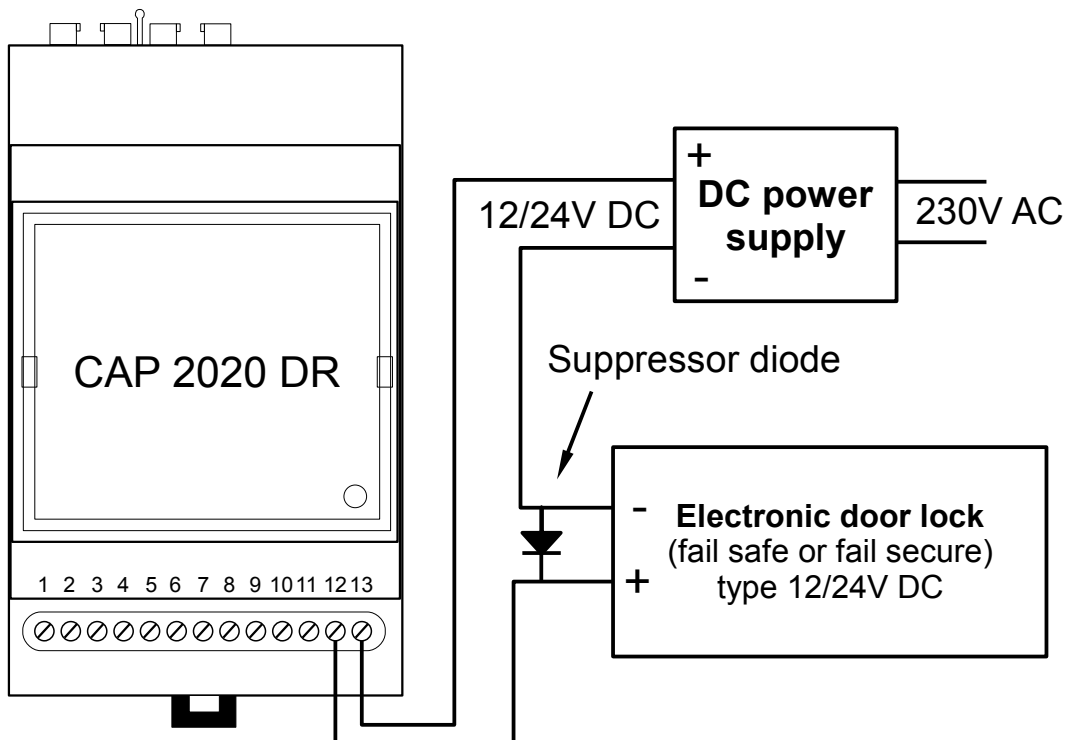
**NOTE:** Some proximity card / PIN readers don't have a LED control input. For these readers the LED control output of the CAP 200 DR is not connected.  
Some proximity card / PIN readers have auxiliary inputs and outputs (ex. tamper, auxiliary led). These auxiliary inputs and outputs cant not be connected to the CAP 200 DR.

## Connecting the electronic door lock

Connection example for AC-type electronic door lock:

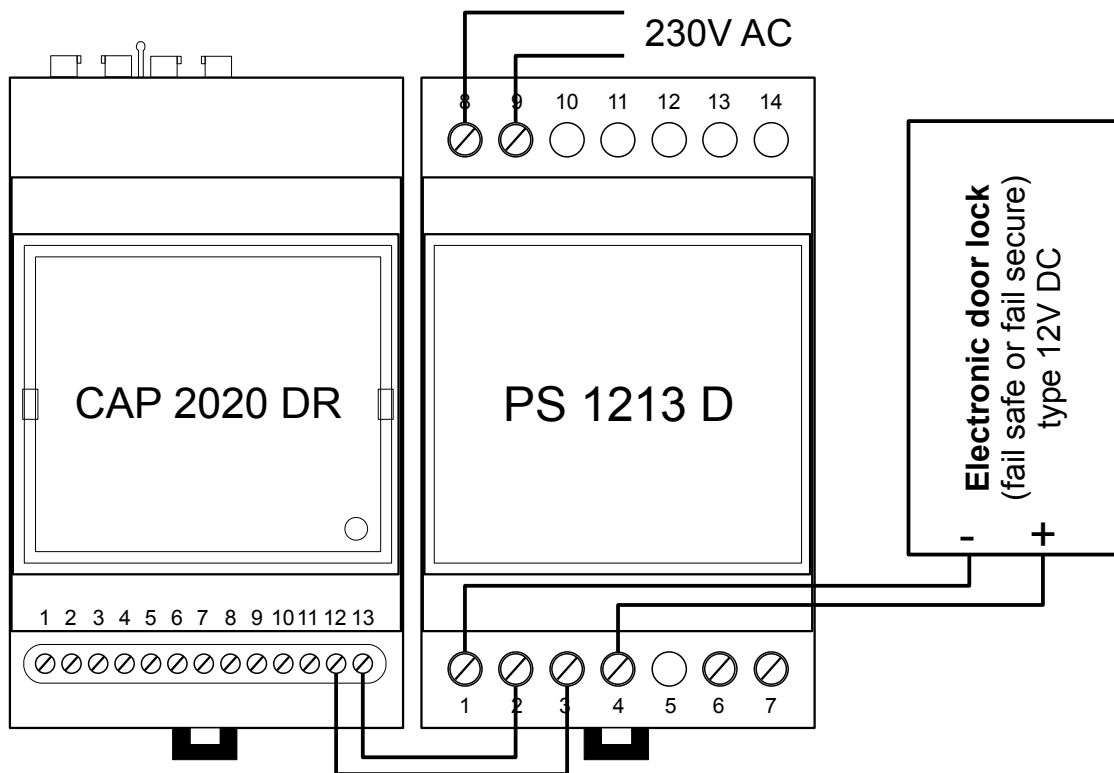


Connection example for DC-type electronic door lock:



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

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



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